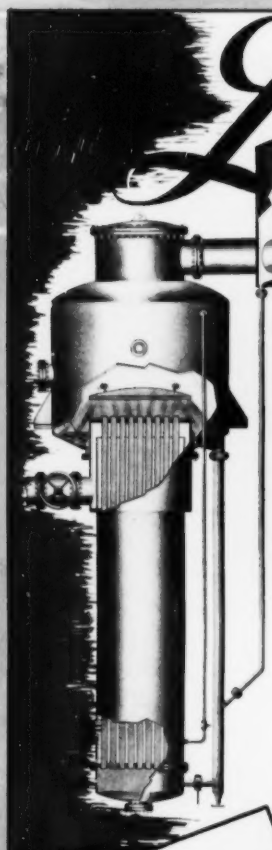
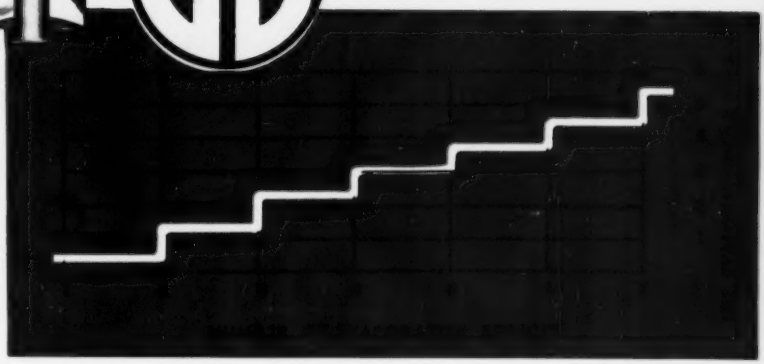
Paper
TRADE JOURNAL
JULY 21, 1949
PUBLISHED WEEKLY

Lower evaporation costs with GB EVAPORATORS





Many pulp mills are lowering their evaporation costs by adding new G-B Evaporator bodies to increase the number of effects in their multiple effect black liquor evaporators. At the present high cost of fuel, these evaporator bodies are paying for themselves in steam savings.

If high evaporating costs is a problem in your plant, get G-B's recommendations on a modernization program. You may be surprised at the figures we can show you on actual operating results before and after installation. Information on request.

* Our engineers are prepared to visit your plant, discuss your requirements and make recommendations without obligation.

GOSLIN BIRMINGHAM MANUFACTURING CO., INC.
BIRMINGHAM 1, ALABAMA
NEW YORK: Goslin-Birmingham, 350 Madison Ave.
CHICAGO: F. M. deBeers and Associates, 20 N. Wacker

the end of horse and buggy days

for stainless sheet and strip

Automobiles were once designed as horseless carriages—even to the dashboard socket for a needless whip. Stainless steel production, too, once struggled thru horse and buggy thinking. More power, heavier rolls, more care in surface finish—and stainless sheet and strip came forth a step-child of carbon steel methods. Today's modern strip mills have changed this, giving stainless production new concepts of quality.

CRUCIBLE, one of the pioneers in stainless steel, has gone still further. Now, *for the first time*, hot and cold rolled stainless steel is made a *specialty product*, by specialty production methods, in a mill built specifically for this purpose—in widths from ½" to 50" inclusive, and in all gauges, grades and finishes.

This is more than merely another source of supply. For, with this new mill at the Midland Works and the Trent Tube Co. joining the organization, CRUCIBLE can now supply you with *every* form of stainless. And, in sheets, plates, strip, bars, tubing, forgings, wire and castings, you can rightly expect the best that modern facilities and generations of *specialty product* leadership can provide.

CRUCIBLE STEEL COMPANY OF AMERICA,
405 Lexington Ave., New York 17, N. Y.

Branches, Warehouses and Distributors in Principal Cities

CRUCIBLE first name in special purpose steels

hot and cold rolled **STAINLESS SHEET AND STRIP**

STAINLESS • HIGH SPEED • TOOL • ALLOY • MACHINERY • SPECIAL PURPOSE • STEELS

NO OTHER BELT DRIVE HANDLES POWER LIKE

UNI-PULL

For Efficiency, Long Service, Low Maintenance You can't Beat The New Uni-Pull Drive With Water-Proof Leather Belting.

Uni-Pull, the modern, compact, individual drive keeps maximum power flowing steadily from pulley to pulley.

Here are two reasons for this efficient, uniform power flow:

1. **UNI-PULL MEANS UNIFORM PULLING POWER ACROSS THE PULLEY FACES**—No multiple-belt drive can match the permanently unified pulling power of the modern flat leather belt. *One* belt, *one* pulley grip, *one, even* tension across the pulley face. Result: Longer service life.

2. **UNI-PULL MEANS UNIFORM PULLING POWER AROUND THE PULLEY FACES**—The tension-control motor base automatically keeps the belt at the proper tension despite changes in load. You get smooth, steady power delivery plus longer bearing life.

No substitute material yet discovered can surpass the all round power-transmitting ability of leather belting. And remember, modern leather belting is available in *water-proof* quality.

Modernize your power transmission with the Uni-Pull drive.

American LEATHER BELTING *Association*

Headquarters for Authentic Power Transmission Data

41 PARK ROW, NEW YORK 7, NEW YORK

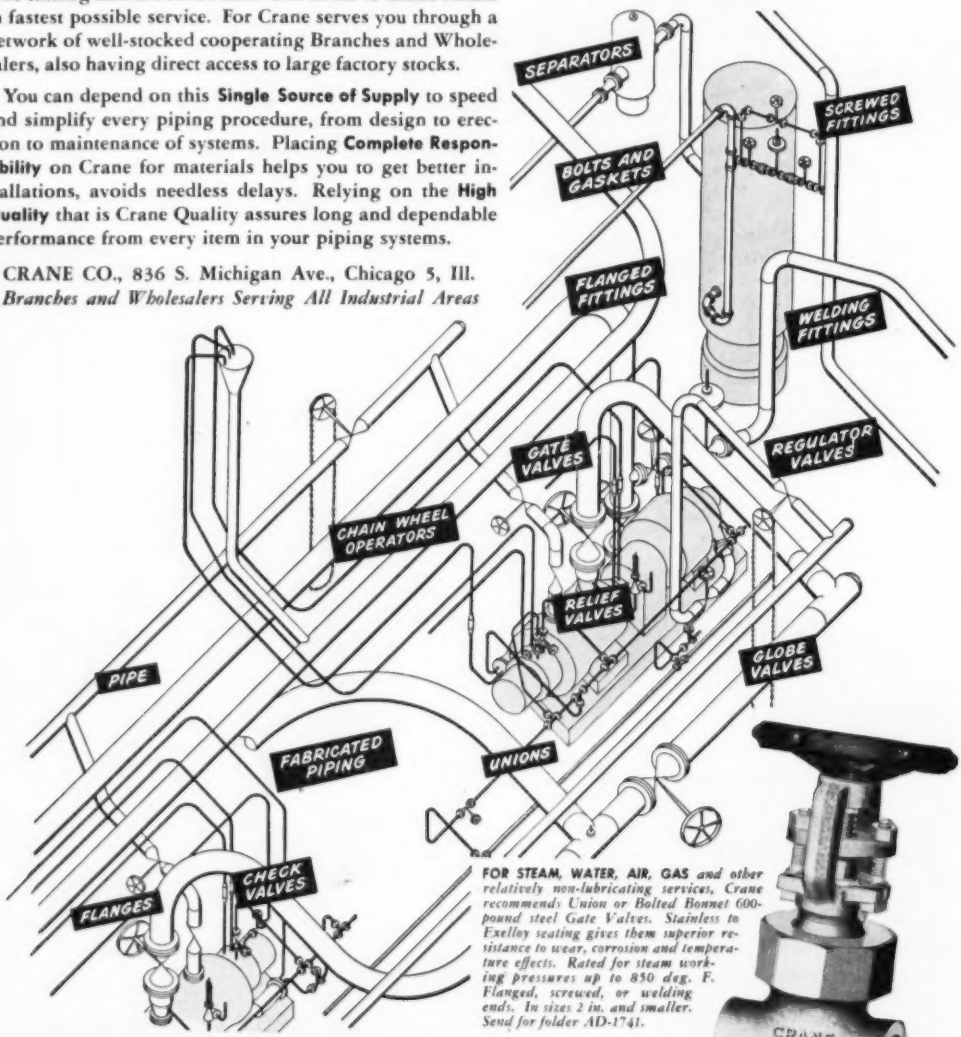
For every fluid . . . or working condition CRANE piping meets the need

For This Boiler Room Piping, for example . . . as for any pressure or temperature condition . . . Crane offers an unequalled selection of valves, fittings, pipe and accessories. One catalog lists the entire line. One order to Crane results in fastest possible service. For Crane serves you through a network of well-stocked cooperating Branches and Wholesalers, also having direct access to large factory stocks.

You can depend on this **Single Source of Supply** to speed and simplify every piping procedure, from design to erection to maintenance of systems. Placing **Complete Responsibility** on Crane for materials helps you to get better installations, avoids needless delays. Relying on the **High Quality** that is Crane Quality assures long and dependable performance from every item in your piping systems.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

ONE SOURCE OF SUPPLY
RESPONSIBILITY
STANDARD OF QUALITY



FOR STEAM, WATER, AIR, GAS *and other relatively non-lubricating services, Crane recommends Union or Bolted Bonnet 600-pound steel Gate Valves. Stainless to Exelloy seating gives them superior resistance to wear, corrosion and temperature effects. Rated for steam working pressures up to 850 deg. F. Flanged, screwed, or welding ends. In sizes 2 in. and smaller. Send for folder AD-1741.*

EVERYTHING FROM . . .
VALVES • FITTINGS
PIPE • PLUMBING
AND HEATING

CRANE

FOR EVERY PIPING SYSTEM

PUBLISHED

EVERY THURSDAY

by

LOCKWOOD

TRADE JOURNAL CO., INC.

15 West Forty-Seventh Street
New York 19, N. Y.
Phone: PLaza 7-2370

•

GEORGE E. LOCKWOOD
President and Treasurer
ARTHUR E. GORDON
Vice-President
FREDERICK E. WINKLER
Secretary
H. G. HEITZEBERG
Editor
E. P. McGINN
Industrial Editor
E. P. NUTTALL
Assistant Editor
F. B. GROSSE
Production Manager

•

REPRESENTATIVES

Eastern

BRUCE E. BROWN
FRANKLYN H. OLSEN
15 West Forty-Seventh Street
New York 19, New York
Telephone: PLaza 7-2370

Mid-Western

H. K. VINTON
30 North Dearborn Street
Chicago 2, Ill.
Phone CEntral 6-2784

Pacific Coast

ROY M. McDONALD & CO.
564 Market Street
San Francisco 4, Calif.
Phone: YUkon 6-0503

639 South Wilton Place
Los Angeles 5, Calif.
Phone: Drexel 2590

Terminal Sales Building
Seattle 1, Wash.
Phone: Main 3860

Southern

EDWARD M. BUCK
1025 National City Bldg.
Dallas 1, Texas
Riverside 1230

Scandinavian

Publicentral
Stadsgarden 18
Stockholm, Sweden

•

Subscriptions

Payable in advance.
By the year, $5.00
Single copy 15 Cents
Canada, $7.00
Other Foreign countries, $8.50

MEMBER

JULY 21, 1949 In This Issue

	Page
News of the Week	10
Paper in Food Packaging	16
UK Dollars Slash Hits Canada	20
Government Meets Waste Paper Men	22
Imports of Pulpwood, Pulp, Papers & Paper Products	24
The Paper Market	28
The Effect of Condensate and Air on Output, Quality and Steam Consumption of Paper Machine Dryers	37
Patent Licenses	41
Patent Abstracts	43
API Import Committee Reports	49

DEPARTMENTS

	Page		Page
Trends	7	Literature	33
Mills	10	Industrial Development Section	37
Converters	12	Prices	45
Merchants	14	Markets	46
Forestry	14	Imports	46
Associations	14	Financial Record	48
Labor	16	Traffic	50
Foreign	18	Awards	54
Miscellany	20	Obituaries	54
Suppliers	30	Production Ratio Table	54
Equipment	33	Classified Advertising	56

INDEX TO ADVERTISERS ON PAGE 68

Paper TRADE JOURNAL

VOL. 129 **NO. 3**

Entered as Second Class matter at the post office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. Publication Office at Lockwood Trade Journal Co., Inc., 34 N. Crystal St., East Stroudsburg, Pa. Printed in U.S.A. Copyright 1949 by Lockwood Trade Journal Co., Inc. PAPER established Feb. 17, 1899, combined with PAPER TRADE JOURNAL, Nov. 16, 1899. PAPER, established Sept. 21, 1910, combined with PAPER TRADE JOURNAL, February 19, 1926. All rights to the above titles reserved. Contents of PAPER TRADE JOURNAL, including all articles, illustrations, etc., are copyrighted and may not be reprinted except by permission. PAPER TRADE JOURNAL is indexed in *Industrial Arts Index* and *Engineering Index*. Also publisher of LOCKWOOD'S Annual DIRECTORY OF THE PAPER AND ALLIED TRADES.

Figure the Angleflow when you want BIG volume

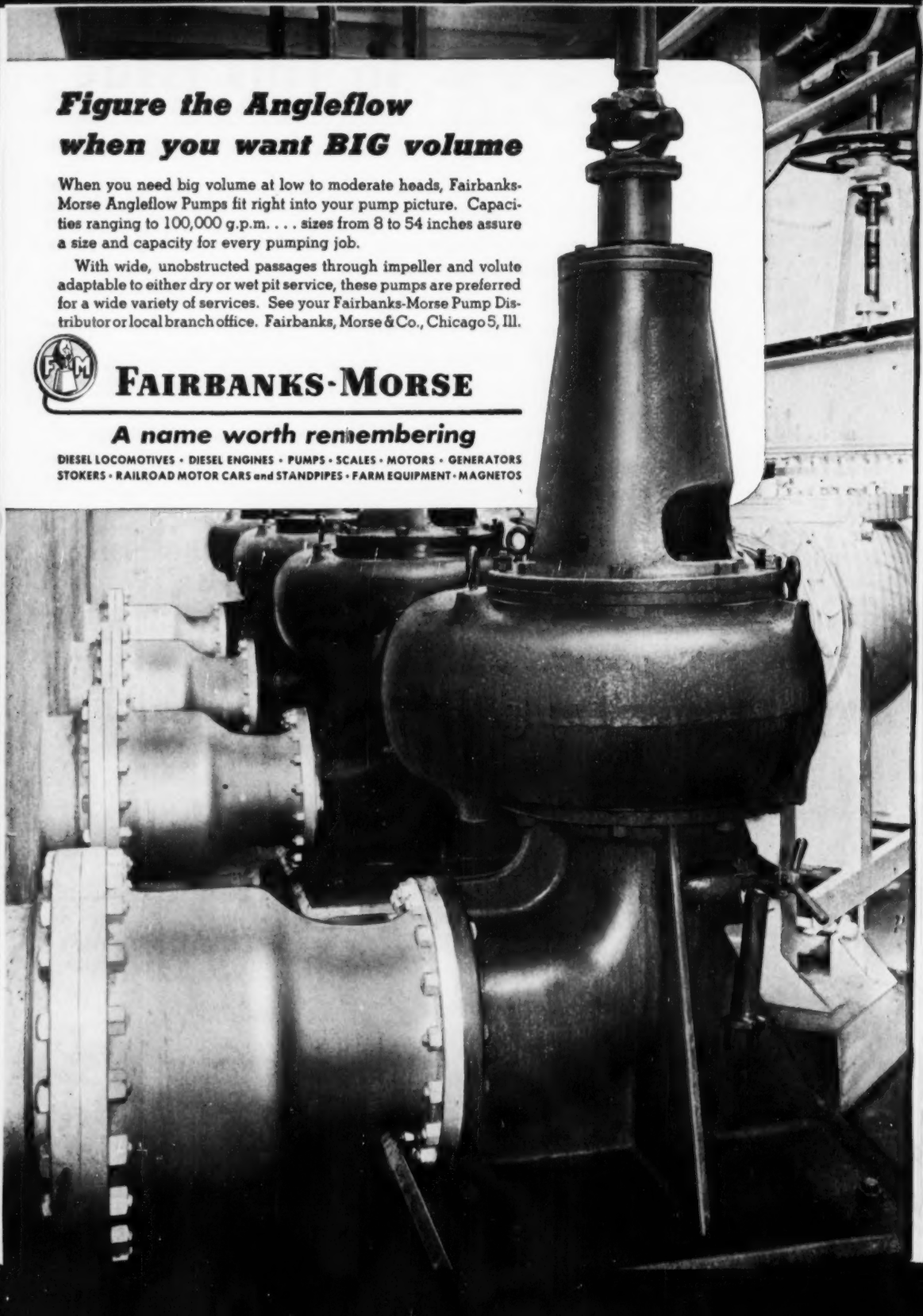
When you need big volume at low to moderate heads, Fairbanks-Morse Angleflow Pumps fit right into your pump picture. Capacities ranging to 100,000 g.p.m. . . . sizes from 8 to 54 inches assure a size and capacity for every pumping job.

With wide, unobstructed passages through impeller and volute adaptable to either dry or wet pit service, these pumps are preferred for a wide variety of services. See your Fairbanks-Morse Pump Distributor or local branch office. Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE

A name worth remembering

DIESEL LOCOMOTIVES • DIESEL ENGINES • PUMPS • SCALES • MOTORS • GENERATORS
STOKERS • RAILROAD MOTOR CARS and STANDPIPES • FARM EQUIPMENT • MAGNETOS



Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, July 20, 1949.

Wood Pulp Market Drowses

The wood pulp market roused long enough from its midsummer drowsiness to wave off a British currency horsefly and to wonder where it would bite, then dozed off again. Time enough to worry when buying starts again, say early in August; but it's sort of pleasant just now sleeping through the ailment which official Washington has diagnosed as a temporary *misery*.

To a market as soft as the woodpulp, and to one so vital to various national economies, news of an immediate 33⅓ percent cutback in British purchases from Canada could be shaking, a loss to Canada, perhaps a gain for Scandinavia. Until details are known, none seem disposed to conjure up trouble.

Newsprint Makes World Headlines

Increasing demand, growing supply, Scandinavian price cuts, British purchase cutbacks, new mills, all made world headline news during the week ended July 16.

A bright spot to Canadian producers is monthly report on advertising linage, just released, which points up the growing newsprint requirements for the "shoppers' market" (see Table I). Production and inventory statistics indicate a steady growth in supply and healthy stock conditions.

North American production totaled 513,359 tons in June, 1949, compared with 498,474 tons in June, 1948, exceeding any June on record, NSB reports. Mill stocks at the end of June were 163,873 tons at Canadian mills (including Newfoundland), 13,091 at U. S. mills, a combined total of 176,964 tons, compared with 185,935 tons at the end of May, 1949, and with 140,041 tons at the close of June, 1948.

Publishers stocks on hand and in transit, for a total of all newspapers reporting to the ANPA, were 460,735 tons, or 39 days' supply, at the end of June, 1949, an increase of 4 days compared with the end of May and 5 days compared with June, 1948.

Total estimated newsprint consumption in the U. S. for June was 442,967 tons, which includes all kinds of uses, the ANPA reports.

Newsprint Makes News

British Board of Trade reduced the maximum price of most generally used type of newsprint by £5 6s 3d or $21.25 a ton on July 4, to make the new price between £35 and £36 a ton, ANPA bulletin of July 7 reports.

Scandinavia Cuts Prices

Contradictory statements regarding price cuts of Swedish, Norwegian and Finnish papers have appeared in the press during the week. From Stockholm, Sweden, on July 8, a report stated that the agreed-upon price cuts included newsprint, while another dispatch dated July 10 emanating from Stockholm excepted newsprint. This much is known: the Finnish contract price remains as it has been—at Canadian contract levels. Swedish spot newsprint may conceivably have been adjusted to meet the U. S. market conditions of approximate supply-demand. Spot prices have been above Canadian contract levels. No confirmation or denial of the Stockholm reports has been cleared. Norway's newsprint was offered to Britain, according to June 2 London report, at £31 10s per long ton ($113.40 short ton) delivered in England, providing Britain will take 5,000 tons more than the quantity under contract. The item added that Finland and Sweden, which had recently agreed to supply newsprint to Britain at £33 a long ton, ($118.80 short ton) delivered in England, would probably agree to meet the Norwegian figure, according to report appearing in ANPA bulletin.

ECA Newsprint Allocations

ECA release of June 17 reported allocation of $5,340,000 to England for the purchase of newsprint and mechanical pulp from Canada for delivery during the third and fourth quarters of 1949. ANPA was advised that of this sum $5,040,000 was allowed for newsprint covering roughly 50,000 tons.

No Alarm Over British Cuts

Announcement that British purchases of pulp, paper, newsprint and other commodities from Canada would immediately be cut back a third because of the British dollar shortage has not unduly alarmed the New York market. Little likelihood appears that any appreciable change will be effected during 1949, it is learned, inasmuch as this year's requirements are either already shipped or so far along in special production that acceptance of the supply is a foregone conclusion. (British newsprint has its own specifications.) Asked whether such a cutback in purchases would sufficiently increase supply as to soften the newsprint price, trade spokesmen say that the quantity involved, figured against the contract cuts made effective in 1947, would be insignificant compared with the vastness of the U. S. supply, and that, of itself, could have little bearing.

Export Market †

Spain — Little or no chemical wood pulp is produced in Spain, and its paper industry depends chiefly on domestic pulps of straw or esparto, waste paper and imported types. Commercial treaty between Spain and Sweden is reported to provide for exportation of substantial quantities of Swedish wood pulp to Spain.

Among the new plants scheduled to begin production during 1949 is a cellophane plant with planned capacity of 900 metric tons per year.

† Source, OIT, U. S. Dept. of Commerce.

TABLE I

Newspaper Advertising Linage

(Thousands of Lines)

	1948	1949			
	April	May	February	March	April	May
Linage, total (52 cities)	197,221	197,809	163,379	202,070	205,466	210,677
Classified	45,848	47,643	35,559	42,195	43,404	45,386
Display, total	151,373	150,166	127,820	159,875	162,062	165,291
Automotive	7,047	7,557	7,335	9,698	9,791	9,554
Financial	2,295	2,120	1,744	2,236	2,143	2,001
General	30,475	31,920	26,920	34,029	35,453	33,758
Retail	111,557	109,396	91,820	113,914	117,676	119,978

Vacation Week Indexes

The Fourth of July holiday and accompanying mill vacation closings account for the noticeable drop in production ratio during the week ended July 9, 1949, the APPA reports.

Ratio of production of unbleached kraft paper to potential mill capacity for that product was 40.7 percent for the week ended July 9, compared with 66.0 for the preceding week, and with 67.8 for the corresponding week of last year.

Comparative ratios of U. S. paper and paperboard production to mill capacity, as reported by AP&PA are:

	July 9 1949	July 2 1949	July 10 1948	July 12 1947	July 13 1946
Paper	45.2	79.7	62.3	93.5	95.2
Paperboard	35.0	75.0	56.0	76.0	87.0

Paperboard Production (Tons)

	July 9 1949	July 2 1949	July 10 1948
Production	73,941	153,817	108,114
New Orders	104,809	161,576	123,790
Unfilled Orders	278,124	243,297	393,515

Percent of Activity, Current 35%; Year, 79%.

General Business Index

Index of general business activity for the week ended July 9 eased to 130.0 from 133.4 in the preceding week, compared with 147.8 in the corresponding week of 1948. Index of paperboard production dropped to 91.0 from 151.5 in the preceding week, compared with 134.2 in the corresponding week of 1948.

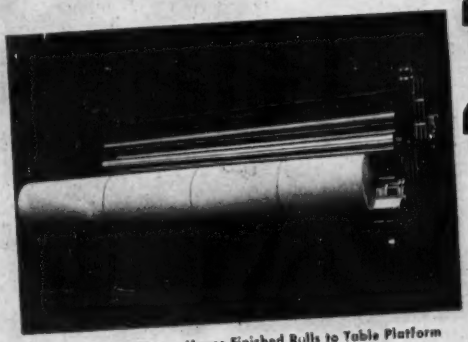
(Continued on page 52)

IT PAYS to unload heavy rolls this new easy way...

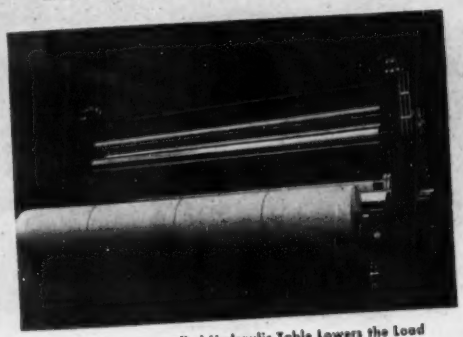
Camachine

- Motor Driven Roll Ejector
- Hydraulic Unloading Table

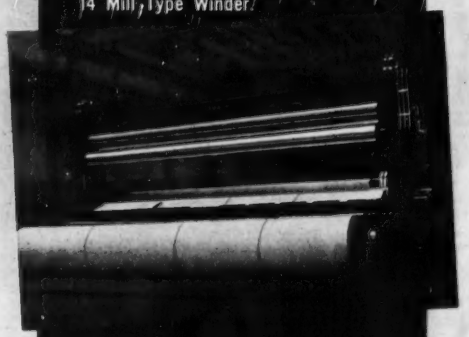
Here's a cost-cutting combination that's worth investigating! On big new Camachine Mill Type Winders 20, 19 and 18, the roll ejector is standard equipment, the unloading table optional. Both are optional equipment on the smaller Camachine 14 Mill Type Winder.



Motor Driven Ejector Moves Finished Rolls to Table Platform



Push-Button Controlled Hydraulic Table Lowers the Load



8 SECONDS TO THE FLOOR
SAVE TIME • PAPER • WORK

MECHANIZED ROLL UNLOADING . . .

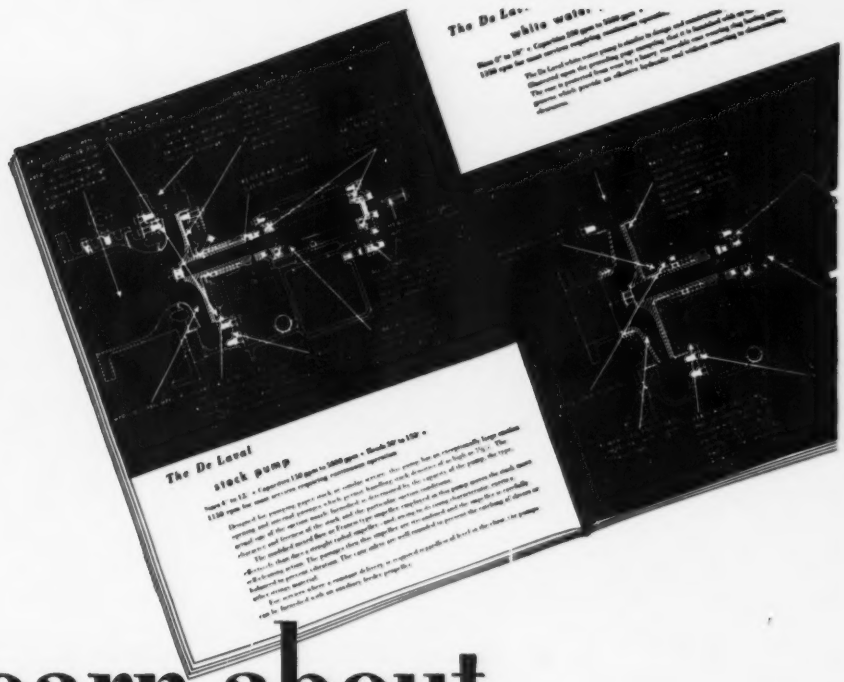
CAMACHINE mechanized unloading equipment speeds up handling of finished rolls—cuts costly downtime on the winder during roll changes—saves loss of paper during roll changes—and reduces the danger of damaged rolls and accidents at the winder by eliminating manual handling of the heavy rolls. Consult with Camachine engineers for complete information on the motor driven roll ejector and hydraulic roll unloading table. Also—investigate Camachine pneumatic cutter units and other new Camachine cost-cutting features designed to provide top quality winder service to the world's fastest paper machines.

Camachines *FOR FAST, TOP QUALITY ROLL PRODUCTION*

WRITE FOR LITERATURE *. . . the world over*

AA807

CAMERON MACHINE COMPANY, 61 POPLAR STREET, BROOKLYN 2, N.Y.



learn about

the latest improvements in paper mill pumps

Send for your copy of this new De Laval pulp and paper mill pump catalog and get all the facts about the new line of De Laval pumps especially designed for handling paper stock, white water, liquors, clays and fillers.

As a practical, paper mill man you'll appreciate the many exceptional features of these new pumps.

For example:

- The stock pumps are designed for handling extremely high densities.
- Renewable liners protect surfaces subject to wear or corrosion.
- Shafts, sleeves, bearings and other parts are interchangeable.
- All working parts can be inspected or removed without disturbing piping connections.

Send for catalog 11-PT

DE LAVAL STEAM TURBINE CO., TRENTON 2, N. J.

TURBINES • HELICAL GEARS • CENTRIFUGAL BLOWERS AND COMPRESSORS
CENTRIFUGAL PUMPS • WORM GEAR SPEED REDUCERS • IMO OIL PUMPS

2

Paper TRADE JOURNAL

News of the Week

MILLS

Annual Reports Win Awards

NEW YORK—From the 4,200 corporation annual reports for 1948 submitted in the Ninth Annual Survey, conducted by Weston Smith of *Financial World*, 23 pulp and paper manufacturing companies have qualified for "Highest Merit Award" citations. They are: Abitibi Power & Paper Co., Ltd.; Bathhurst Power & Paper Co., Ltd.; British Col. Forest Products; Brown Co.; Champion Paper & Fibre Co.; Crown Zellerbach Corp.; Eastern Corp.; Eddy Paper Co., Ltd.; Great Northern Paper Co.; Hammermill Paper Co.; Hoberg Paper Mills; International Paper Co.; Kimberly-Clark Corp.; Marathon Corp.; Mead Corp.; Nekoosa-Edwards Paper Co.; Oxford Paper Co.; Puget Sound Pulp & Timber Co.; Riegel Paper Corp.; St. Lawrence Corp., Ltd.; St. Regis Paper Co.; Howard Smith Paper Mills, Inc.; and West Virginia Pulp & Paper Co.

The stockholder reports of these companies have thus become candidates for the final judging, and one will be selected for a Best of Industry award and presented with a bronze Oscar of Industry at the Financial World Annual Report Awards Banquet on October 31, in the Grand Ballroom of Hotel Statler.

A year ago, the 1947 annual report of the Champion Paper & Fibre Company won the trophy in this industrial classification.

The independent board of judges in this year's competition is under the chairmanship of Dr. Lewis H. Haney, professor of economics at New York University, and he is assisted by Dr. Glenn Griswold, publisher of Public Relations News; Sylvia F. Porter, financial editor of the New York Post; Elmer C. Walzer, financial editor of the United Press; Dr. B. Bernard Greidinger, C.P.A.; and Paul Carlyle, executive vice president of Van Diver & Carlyle, Inc.

Rayonier Operations Resumed

HOQUIAM, Wash.—Operations at the pulp and paper mill of Rayonier, Inc., here were resumed July 5.

The pulp mill is scheduled to operate on a normal full time schedule of seven days per week requiring the full complement of employes. The paper mill also started on July 5 on a five-day-week schedule.

Powell River Production Record

POWELL RIVER, B. C.—Powell River Co. on June 28 produced 1,012.3 tons of newsprint in a 24-hour period, setting an all-time record for that firm. In achieving the new record, machines No. 5 and No. 8 both set individual production records (176.6 tons and 200.7 tons, respectively). As a token of appreciation to all regular employes for this record, a bonus of $10 was paid to each man, R. M. Cooper, resident manager, reports.

Union "Wet Pak Pek" Bag

SAVANNAH, Ga.—The Union Bag and Paper Corp. is producing a new moist-proof bag made from wet strength paper fitted with a window made from moisture-proof transparent film. Leonard J. Doyle, in charge of bag and paper sales, stated that except for the moisture resistant feature, the new bag is the counterpart of a dry pack window container introduced earlier for prepackaging dried produce. It is sold under the trade name of "Wet Pack Pek", pronounced "Peek".

4-H Jim Allen Day

PENSACOLA—J. H. Allen, head of the St. Regis Paper Co. plants at Cantonment, Fla., was honor guest recently on Jim Allen Day at the 4-H club boys' camp at the timber-grazing-game project on the Nine Mile Road. Mr. Allen teaches the boys reforestation and how timber growing, cattle raising and wildlife protection go hand-in-hand for a balanced program.

Paper Mill Auctioned

YORK, Pa.—The paper manufacturplant in Springettsbury township, on Paper Mill road has been sold at auction by Sheriff Clyde F. Bentzel at a bid of $52,000 to the execution creditor, the Industrial Litho Co., formerly the York Paper Mfg. Co.

The buildings, machinery, equipment, office furniture and 18.11 acres of land were included for this bid. Some personal property was bid in by Attorneys Fisher, Ports and May at $250 for five or six other creditors. Against this the U. S. government has prior claims of approximately $6,000.

The property was sold as that of Joseph DiCandia, mortgagor to the extent of $239,703.36, and the York Paper Mfg. Co.

Merrimac Executive Realignment

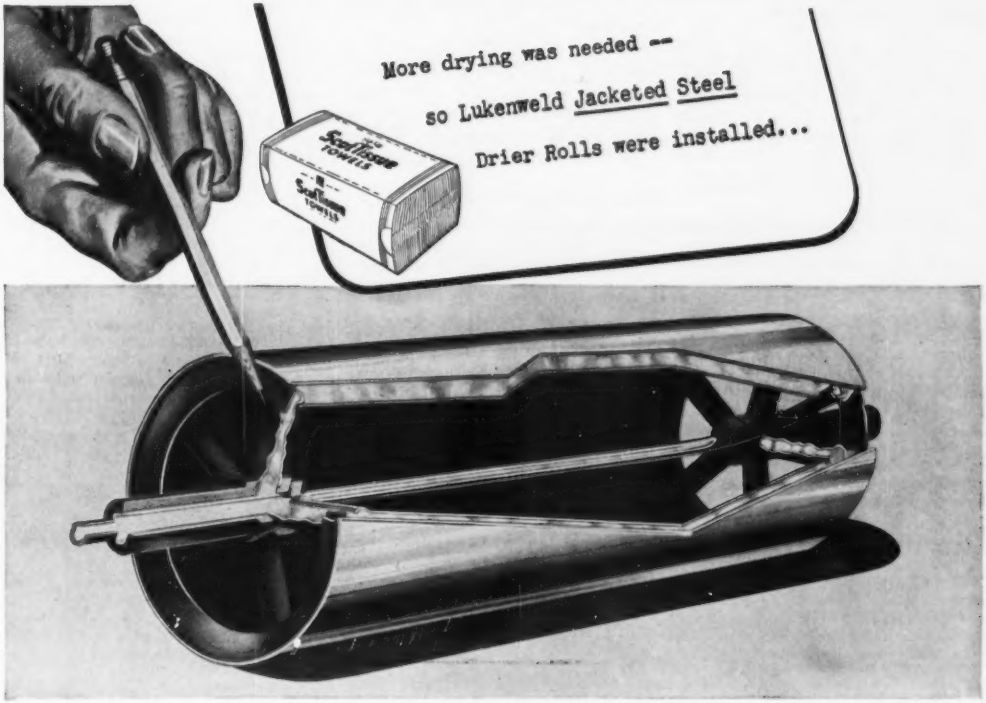
LAWRENCE, Mass.—Norman J. Stein has been elected vice-president of the Merrimac Paper Co., Inc., and R. Hann, president, has been elected president-treasurer. Mr. Stein has been manager of the company's mills in Lawrence and director of sales in New England since 1944.

Swindlehurst 30-Year Man

ERIE, Pa.—Fred Swindlehurst, foreman of the Hammermill Paper Co., sulphite mill here, completed 30 years of service with Hammermill on his birthday, July 7. He started with the firm as an office boy.

KIMBERLY CLARK CORP. ADVANCES FOUR

Left to right: R. A. Wolterding, S. L. Swenson, L. E. Pasek and M. W. Keyes. . . Mr. Wolterding has been named assistant sales manager of the creped wadding division of the Kimberly-Clark Corp., Neenah, Wis., and Mr. Swenson, product engineer. . . Mr. Pasek has been named assistant sales manager of the Kimsul insulating division and Mr Keyes, product engineer. . . R. B. Sawtell is sales manager of both divisions.



Towel machine at SCOTT PAPER COMPANY reaches an acceptable production rate faster...*with safety*

When engineers at Scott Paper Company required extra drying capacity on a paper towel machine, they installed a number of Lukenweld Jacketed Steel Drier Rolls in the machine.

The needed drying was thus supplied, with an extra dividend of safety due to the welded steel construction of these rolls. They contributed to the successful start-up of the machine and the early attainment of an acceptable rate of production.

Lukenweld Drier Rolls owe their performance to these factors: Their jacketed design gives positive scavenging of entrapped air, film and condensate from steam passages, assuring high efficiency. Made of steel plate, wall sections can be thinner with safety, giving rapid heat transfer, with even and constant surface temperatures.

Whatever your roll-drying problems, Lukenweld can serve you. Our engineers will help select the rolls you need, and even design and build the complete machine. Pressures up to 350 psi and higher can be safely employed.

Bulletin 358 tells you more about Lukenweld Jacketed Steel Drier Rolls. For a copy, and for help on your machinery requirements write Lukenweld, Division of Lukens Steel Company, 403 Lukens Building, Coatesville, Pa.

LUKENS
LUKENWELD DIVISION

DESIGNERS, ENGINEERS AND MANUFACTURERS OF MACHINERY

Westvaco Confers on Title

CHARLESTON, S. C. — Theodore A. Cook, general manager for the West Virginia Pulp and Paper Co., and Charles W. Waring, legal counsel for the company, conferred with Mayor William Morrison last week on proposed acquisition from the city of a portion of the old port terminal area adjoining the company's N. Charleston plant.

President Truman recently signed a bill to convey to the city in fee simple approximately 1,500 acres of land in the port terminal area. West Virginia Pulp and Paper Co. is seeking 279 acres for construction of additional facilities, including construction of a mill to manufacture dissolving pulp, which would mean an investment of about $12,000,000, according to reports.

The company, which holds a 50-year lease with privilege of renewing for a like term at $1 a year on its present site, is reportedly reluctant to proceed with the expansion without having title in fee to the property.

Colorado Paper Mill Projected

GRAND JUNCTION, Colo.—The Columbine Development Co., plans to build a 15-million-dollar paper mill on the Colorado River somewhere between Rifle and Newcastle, to utilize the millions of spruce trees killed by a beetle epidemic in five of the state's national forests. The mill is expected to have a capacity of 185 tons of newsprint and 64 tons of sulfate pulp, daily. The Columbine Development Co., is headed by Preston Walker, general manager of the *Grand Junction Sentinel*. C. F. McCormick of Grand Junction is secretary-treasurer and the majority of the investors are Grand Junction residents.

CONVERTERS . . . .

Bemis Polythylene Lined Bags

ST. LOUIS—Polyethylene lined paper bags are now being supplied by the Paper Specialty Plant of Bemis Bro. Bag Co., with either one, two or three outer walls of kraft paper, and with the liner either inserted loosely or sewn into the bottom seam of the kraft walls. The polyethylene liners supplied by the plant are made from seamless tubes, either flat or with gussets, which vary in width from 2-inches to 54-inches to cover a large variety of bag sizes. Bottoms are formed by heat sealing. Top closures may be either heat sealed or folded, g thered and tied.

New Multi-Wall Bag Plant

RICHMOND, Va.—The Virginia-Carolina Chemical Corp., has opened a textile and paper bag factory in Atlanta, Ga. The new plant, which will manufacture multiwall paper sacks and burlap and cotton bags, is under the direction of D. Harold Johnson, manager of the bag division of the corporation, with headquarters in Richmond. Ernest R. Lacy, formerly of Richmond, has been appointed Southeastern district manager, with headquarters in Atlanta, and Harold R. Stemple is superintendent in charge of plant operations.

Removing Equipment to Nutley, N. J.

HOLYOKE, Mass. — The Perfect Safety Paper Co., is closing its plant here and will transfer the equipment in it to the plant of the parent company, George A. LaMonte & Son, Nutley, N.J. The Perfect company was organized here some 30 years ago by the late J. B. Weis. The paper converted at the local division was procured principally from the Mt. Tom division of the American Writing Paper Corp.

McLaurin-Jones Buys Mich. Plant

BROOKFIELD, Mass. — The McLaurin-Jones Co., manufacturer of gummed, coated, and specialty papers, has purchased the business formerly operated by the Grand River Paper Corp., Grand Rapids, Mich., manufacturer of Tanglefoot gummed products. The Tanglefoot trade name passes to the new owners.

The Grand River plant will be operated as the McLaurin-Jones Co., Grand Rapids Division, by William C. MacLaurin. It is planned to continue the same personnel in Grand Rapids. Headquarters of the newly-combined operation will be in Brookfield.

Mr. MacLaurin states that the Tanglefoot purchase is the first step in a long-range expansion program.

JOSEPH M. KATZ

—president of the Papercraft Corp., Pittsburgh, Pa., manufacturer of Kaycrest products, left recently for Europe where he will spend two months . . . Interested in an exchange information basis with other manufacturers, Mr. Katz will visit industrial, commerical and graphic arts centers to observe new production methods, raw materials, processes and designs . . . Included in his itinerary are London, Copenhagen, Paris, Rome and many other cities on the Continent . . . He will return to the United States on September 1.

Strathmore Safety Dinner

WORONOCO, Mass.—The 111 employes of the Strathmore Paper Co. No. 1 mill here, together with members of their families, went to Savin Rock recently for an all-day outing and shore dinner. The outing was a reward from Strathmore to the employes of Woronoco No. 1 mill for having won the inter-mill safety contest in competition tion with Strathmore's No. 2 mill at Woronoco and its mill at West Springfield.

Woronoco No. 1 mill employes worked from January 1937 until October 1947 without a lost time accident and they did not have any lost time accidents during the period from May 1, 1948, through April 30, 1949—the period of the competition for which they won the outing this year.

Rohrer New Swigart President

CHICAGO — Eric A. Rohrer has been elected president of the Swigart Paper Co., succeeding the late John D. Swigart, who died on July 2. Mr. Rohrer was formerly vice-president. Succeeding him in that post is Arthur M. Kracke, formerly secretary. Herman Detjens succeeds Mr. Kracke as secretary.

Expansion at Stone Corp.

CHICAGO — Marvin N. Stone, vice-president and treasurer of the Stone Container Corp., reports that a 95-inch Corrugator, one of the few of its size in the country, is now being erected in the local plant.

Mr. Stone revealed that among other new installations is a color tinter, or analine rotogravure press.

With the installation of this "block-long" corrugator, the plant will have an additional productive capacity of three million square feet of corrugated board per day.

The color-tinter, Mr. Stone said, enables two colors to be printed at the same time.

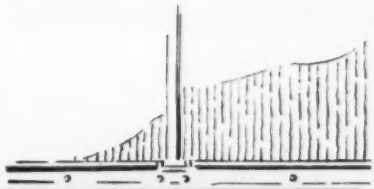
Newark Building Leasee

NEWARK, N. J.—The Ace Olympic Paper Bag Co. has leased the building at 12 Mercer street.

Hygrade Enlarging Quarters

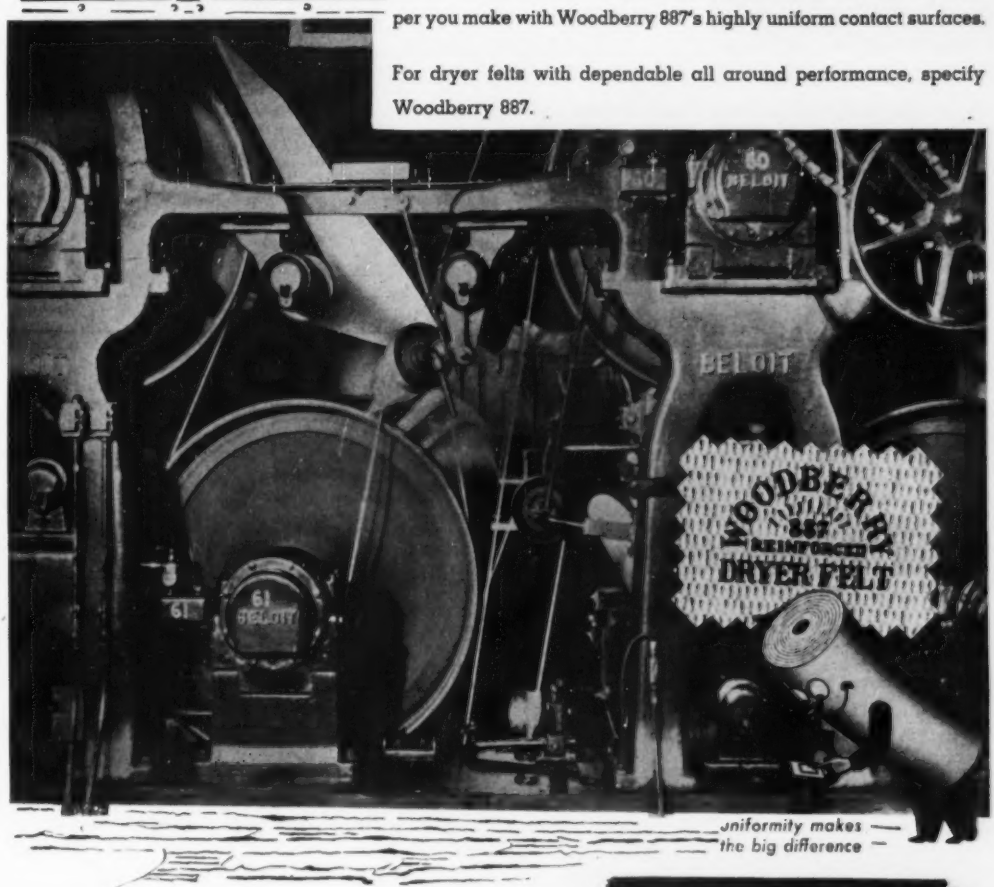
BUFFALO, N. Y.—Hygrade Paper Co., is enlarging its building at 1355 Clinton street.

Paper Production Really Rolls with Woodberry 887 Dryer Felt



These patented reinforced dryer felts really keep paper production rolling. Asbestos yarns woven at scientifically determined intervals into their face insure toughness, longer service, fewer replacements, less interruptions in production. Important too are the extra savings you'll find it the lowered steam consumption that results from Woodberry 887's high degree of porosity—the finer qualities of paper you make with Woodberry 887's highly uniform contact surfaces.

For dryer felts with dependable all around performance, specify Woodberry 887.



uniformity makes the big difference

Mt. Vernon-Woodberry Mills

TURNER HALSEY COMPANY
Selling Agents
40 WORTH ST. • NEW YORK

YES! GO WEST! 1949 Fall Meeting TAPPI Portland, Oregon

Branch Offices: CHICAGO • ATLANTA • BALTIMORE • BOSTON • LOS ANGELES • AKRON

JACK CONRAD

—is now representing the Pollock Paper Corp., Dallas, Texas . . . Mr. Conrad comes to his new post from the Pliofilm department of the Goodyear Tire & Rubber Co.

MERCHANTS . . . .

Carr-Graybill Merge

POMONA, Calif.—The Carr Paper Co., and the Graybill Paper Co., has been merged to form the Carr-Graybill Paper Co., with headquarters at 1190 South Garey avenue.

Officers of the new company are Richard P. Carr, president; Merle Graybill, vice-president and industrial packaging sales manager; Floyd C. Boney, vice-president and sales manager; and Raymond G. Lamb, secretary and treasurer.

FORESTRY . . . . .

Virginia Pine Tree Law

RICHMOND, Va.—In a move to insure sufficient loblolly and shortleaf pine for seed trees for propagation purposes, Virginia's State Forester George W. Dean has ordered his subordinates to begin strict enforcement of Virginia's Pine Seed Tree Law. Because of the rapidly dwindling pine timber in this state this law was passed in the 1948 session of the General Assembly.

According to Mr. Dean, the high quality shortleaf and loblolly saw timber and pulpwood is being cut faster than it is growing.

When the law became effective the Virginia Forest Service began conducting an extensive information campaign and sought to build up a voluntary conservation effort. The reason for this is that the Pine Tree Law itself is based on voluntary action and requires the approval of county Boards of Supervisors. The voluntary nature of the law is shown, too, in the "token" penalty imposed for violating this law —$2.50 for each of four seed trees per acre cut in violation of the act.

Some 48 counties in Virginia have already aproved the Pine Tree Law, which applies only when 50 percent or more of the stand is composed of short leaf or loblolly pine.

Cutting Virginia's Forest Fires

RICHMOND, Va.—The Old Dominion came through the dangerous spring forest fire season this year with comparatively light losses, State Forester George W. Dean has reported.

In the period from March through June 15, a total of 970 fires burned 7,957 acres of forest land. This compares with the five-year average of 1,170 fires and 19.964 acres burned.

The State Forester noted that airplane patrols, supplementing regular observation towers, gave valuable help in spotting, preventing and fighting fires.

He cited particularly the April 15-21 week when 40 fires were reported in the Bristol district, but were kept to an average burn of only 7.75 acres.

Mr. Dean also told of experiments in radio communications conducted in the Bristol area. Sets designed by the United States Forest Service were used.

"The sets, of an extremely portable walkie-talkie type, were effective at ranges up to 90 miles," Mr. Dean reported. "They are light, simple to operate and should prove very useful in forest fire communication."

Battling the Budworms

SEATTLE—Thirty-two industrial leaders, state foresters and entomologists meeting here on July 7 discussed means of combating the spruce budworm which is menacing Western Washington timber.

The budworm has been increasingly active in forest areas near Rainier, La Grande, Oakville and Ashford, Wash., declared W. D. Hagenstein, forest engineer of the joint committee on forest conservation of the West Coast Lumbermen's and Pacific Northwest Loggers associations.

"We cannot afford to delay action in the douglas fir region of Washington," Mr. Hagenstein said. "In Eastern United States and Canada, the spruce budworm already has been more destructive than forest fires."

Reforestation Demonstration

OTTAWA—Canadian Government retation project is being carried out three miles north of nearby Shawville where R. G. Hodgins, retired lumberman, has second-growth timber on 50 acres growing naturally after the heavy timber was cut out; also 20 acres which were denuded of trees or used for farming which now are covered with a growth of 21,000 trees set by Mr. Hodgins. The project was started in 1942. Today the trees planted in rows of seven feet apart are more than 12 feet high. It is expected the trees will reach their full growth and value in some 30 to 40 years from the time of planting, with each year more trees being added.

ASSOCIATIONS . . .

Annual ASTM Meet

ATLANTIC CITY—At the 22 formal technical sessions and the several informal sessions and round-table discussions held during the 1949 Annual Meeting of the American Society for Testing Materials in Atlantic City, June 27-July 1, upward of 185 papers and reports were presented.

On the recommendation of the ASTM technical committees 77 new tentative specifications and methods were approved, and almost 100 previous tentatives are to be adopted as formal standards. Many other specifications and tests were revised and brought up-to-date.

Some idea of the intensive technical activity is given by the fact that there were 450 meetings of technical committees throughout the week.

The total registration for the meeting—1857, not including about 330 ladies—was the second high, exceeded only by the 1944 New York meeting.

President's Address:

50-Year Members Honored:

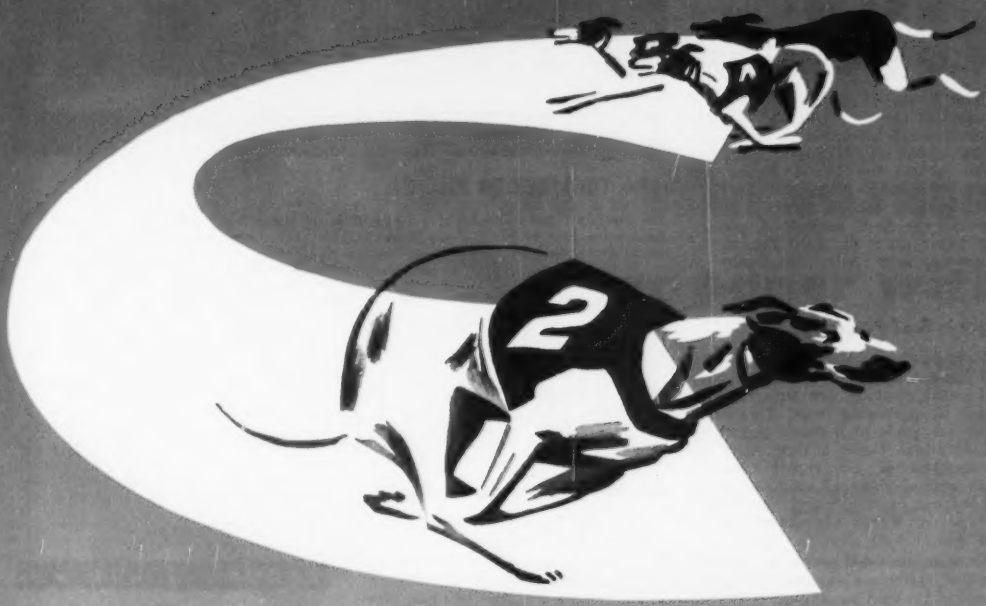
At a special luncheon, the retiring President, Richard L. Templin, presented his address, this year a very trenchant one on "THE PROGRESS OF ASTM." at this time also special awards were made to a small group of individuals and companies who had been continuously affiliated with the Society for 50 years, and a larger group of 40-year members were recognized. Those receiving specially engrossed gold certificates:

James G. Morrow, metallurgical engineer, Steel Co. of Canada, Ltd., Hamilton, Ont., was elected president for 1949-1950, succeeding R. L. Templin, assistant director of research and chief, engineering of tests, Aluminum Co. of America, New Kensington, Pa., who continues on the board of directors as past-president for three years.

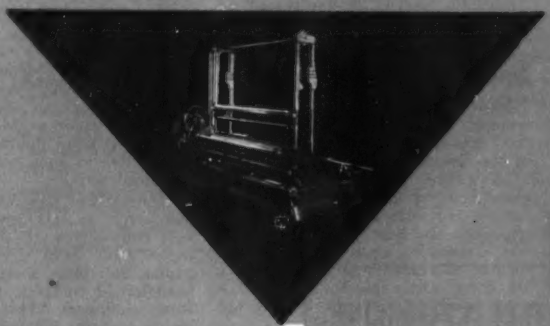
Frank E. Richart, research professor of engineering materials, University of Illinois, Urbana, Ill., is the new vice-president to serve with the senior vice-president, L. J. Markwardt, assistant director, U. S. Forest Products Laboratory, Madison, Wis.

New members of the board of directors are as follows: R. D. Bonney, assistant manager of manufacturing, Congoleum-Nairn, Kearny, N. J.; C. H. Fellows, head, chemical division,

speed: *rate of motion or progress*



You can be dog-gone sure of highest quality rolls, produced with accuracy and *speed*—when you install a Langston. Samuel M. Langston Company, Camden, New Jersey.



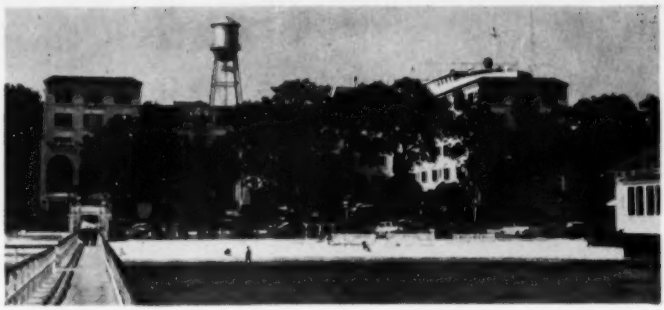
Langston

SLITTERS AND ROLL WINDERS

research department, Detroit-Edison Co., Detroit; H. F. Gonnerman, assistant to vice-president for research and development, Portland Cement Ass'n., Chicago; N. L. Mochel, manager, metallurgical engineering, Westinghouse Electric Corp., Philadelphia; and M. O. Withey, dean of engineering, University of Wisconsin, Madison, Wis.

Pulpwood Production Talk

NEW YORK—"Progress in Pulpwood Production" was the title of the slide-illustrated talk prepared by forest engineer of the APPM Supts. Assn. and given before the Wood Room and Operations group at the 1949 convention held at Atlantic City, N.J., on June 15, the Assn. advises. Copies of this paper on mechanized logging of pulpwood have been distributed to members.



SPA TO MEET IN BILOXI

The Southern Paper Trade Ass'n., will hold its annual convention at the Buena Vista hotel overlooking the Gulf at Biloxi, Miss., September 9-10 . . . Social events will include a cocktail party, formal banquet and dancing. Business meetings and social functions will be held in the hotel's Hurricane Room

Paper in Food Packaging

NEW YORK—"From a public health and sanitation point of view, paper and paper products are superior materials for packaging food." This statement was made in a recent report by the American Paper & Pulp Ass'n. to its membership. The report stemmed from several years of intensive study carried out by the Association at the Institute of Paper Chemistry, Appleton, Wis.

Over an extended period the general question of the use of paper and paper products in food packaging has been studied from several angles. One phase of the work has been concerned with the bacteriological examination of more than 2,500 specimens of paper, taken at random from 28 widely located mills and including 35 different types of paper and paperboard ordinarily used in the packaging of foods. These sheets were tested for the presence or absence of disease-producing bacteria as well as for the presence of non-disease-producing forms. Of all the tests made, none showed the presence of the disease-producing type and the incidence of nondisease-producing forms were either absent or very low.

Another phase of the study was to determine the effect of the paper manufacturing process on bacteria, artificially introduced into the stock from which paper is made. For example, a heavy suspension of *Escherichia coli*, a bacterium found in the digestive tract of humans and other warm-blooded animals, was sprayed onto the wet sheet just before it entered the drier section of a paper machine. Analyses of this wet web showed a coliform count as high as 4,577,000 bacteria per gram of paper, and yet after the paper had passed over the driers, analyses showed that all of the coliform bacteria had been destroyed.

"There is no question," the report concluded, "that from a public health point of view, paper and paper products are superior, if not ideal, materials for the packaging of all types of foods. Not only is paper free from disease-producing bacteria, but it has the added advantage of being a single-service container, thus preventing the chances of food contamination through reuse."

N. E. Div. Supt's. Meets Sept. 22-24

RUMFORD, Maine.—A. F. Tolland of the Oxford Paper Co., chairman of the Northeastern Division of the American Pulp & Paper Mill Superintendents Ass'n., reports that the 1949 Fall Meeting of the division will be held at Poland Spring, Maine, September 22-24. Details of the program will be available shortly.

Hanson Signs Five SAPI's

BOSTON—Five new additions to the membership of the Salesmen's Ass'n., of the Paper Industry credited to the efforts of Eugene Hanson of the Brown Co., are: David Cheever and Thomas Curtis of the Hollingsworth & Whitney Co.; Douglas Cowie of Lewis Brownville, John G. Reynolds of the Brown Co., and C. S. Trefrey of the Mead Sales Corp.

Straws in the Wind

NEW YORK—E. G. Amos, secretary-treasurer of the Salesmen's Ass'n., of the Paper Industry, in the July 12 issue of the Association's bulletin, says:

"A while back we heard a lot of gloom being spread around about production and sales in the paper industry. Now we hear rumors the other way, especially among sales people, such as "Business is not so bad", "We are doing pretty good", "We had a good month", "It's work, but we are keeping up with last year", etc.

"This is encouraging. Now the New York *Times* admits paper prices are stabilized, and with the annual mid-year drop in production due to vacations at mills nearly out of the way, we feel that the paper industry is in for a good business the last half of '49.

"An economist would have quoted figures and drawn you a chart, but being a layman who never sold or made a pound of paper, we can only point to the straws in the wind. They seem to point in the right direction."

LABOR

Value of Cooperation Stressed

OTTAWA—The co-operative theme of harmonious relations between labor and management in the pulp and paper industry was stressed by two of the principal speakers at the 12th annual convention of the Ontario and Manitoba Council of Pulp and Paper Mill Unions held recently at Fort William.

These good relations were emphasized by the Hon. W. Earl Rowe, president of the Great Lakes Paper Co., and John P. Burke, president-secretary of the International Brotherhood of Pulp, Sulphite & Paper Mill Workers.

Mr. Rowe emphasized that understanding between labor and management is the answer to the threat of basic principles of democracy and free enterprise. "Today," he said, "we are passing through an adjustment period in an uncertain world economy. We are facing more difficult days, highly competitive in home and international industrial activity."

"During the last century, by trial and error, success and failure, over four million free and successful enterprises have been developed by the genius, enterprise, thrift, sacrifice and hard toil of energetic free men," Mr. Rowe continued. "This is a challenge which concerns not only management, but vitally concerns labor as well. If we are to preserve this economy which is still free and enterprising, it will be

That's a MARKET going to pieces!

WET-STRENGTHEN your paper with Uformites

When paper towels disintegrate into sopping shreds, somebody's due to lose business—probably the papermaker who neglects to wet-strengthen his paper.

Too bad—especially since UFORMITE 475 gives high wet strength plus maximum absorbency at low cost. As little as $4 per ton of paper boosts wet Mullen values 300%, raises dry Mullen and fold values 10 to 30%, and increases wet rub and scuff resistance, wet and dry tensile.

In paper toweling, UFORMITE 475 eliminates the see-saw relationship that has made a strong, absorbent towel a hard-to-realize ideal. In twisting tissue, too, the resin prevents breakage on paper-twisting machines. And in bags; reproduction or printing papers; glassine; tasteless, odorless, grease-proof wrappings, the UFORMITES provide the high wet strength your customers want.

And low price is not the only saving. With the UFORMITES, there's no pretreatment necessary, no special processing or equipment. Just add UFORMITE 467 (for kraft bags, etc.) at the beater, or UFORMITE 470 (for high pH kraft, groundwood, and sulfite) anywhere at the wet end after the Jordans. With the UFORMITES, you'll improve the sizing efficiency of rosin and the retention of beater additives. For full information on UFORMITES—plus samples of these resins—write today. There's no obligation.

UFORMITES for Paper

Your copy of this free booklet will answer your technical questions about the UFORMITES, and how they are used to increase wet strength. Send for it today.

OTHER CHEMICALS FOR THE PAPER INDUSTRY

AMBERLITE W-1—A water soluble polymer for improving the dry and wet tensile and Mullen, as well as the fold and the abrasion resistance of paper.

RHOZYMES BB and E-3—for enzyme conversion of starch.

TAMOL N—for effective pitch control—a dispersing agent for pigments.

TRITONS—Surface-active agents with a score of uses in paper manufacture—in caustic cooking of cotton fiber, as a dispersing agent for pigments and metallic soaps, emulsion-type coatings.

The Hydrosulfites—Reducing agents for stripping color from rag stock or for bleaching pulp.

HYAMINES—Deodorants for paperboard and glue bactericides.

UFORMITE, AMBERLITE, RHOZYME, TAMOL, TRITON, HYAMINE are trade-marks, Reg. U. S. Pat. Off.

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

THE RESINOUS PRODUCTS DIVISION

Washington Square, Philadelphia 5, Pa.

The Resinous Products Division was formerly The Resinous Products & Chemical Company

done only by management and labor uniting to meet the challenge which neither can meet alone."

"And let there be no mistake about this fact," he stated. "Our free economy is just as vital to labor as it is to management."

Mr. Rowe said a major question today is how joint participation by labor and management can best be worked out to preserve the way of life both desire. "In the field of security of the worker," he said, "the day is not far distant when life, accident, health insurance and pension schemes will become part and parcel of employment. Management will benefit as well as workers by the universal acceptance of such a relationship."

Mr. Burke gave as his opinion that "during the past 25 or 30 years the changes in the industry have all been for the better." He offered as examples "increasing wages, better working conditions, worker benefits and numerous other advancements in social security."

"It is the responsibility of unions to make every possible effort to review that responsibility before resorting to strikes," he said. It is time the members of the unions began to think a little, for eternal vigilance is the price of victory."

The seven unions represented at the convention were: International Brotherhood of Paper Makers; International Brotherhood of Pulp, Sulphite & Paper Mill Workers; International Ass'n. of Machinists; International Brotherhood of Electrical Workers; International Brotherhood of Firemen & Oilers; International Union of Operating Engineers, and International Union of Office Workers.

National Paper Products Co. Pact

CARTHAGE, N. Y.—Wage increases to certain groups of workers were incorporated in a contract for a year signed on July 11 by officials of the Crown Zellerbach Division of the National Paper Products Co. and Clarence Bancroft, president of Local 118, International Brotherhood of Pulp & Sulphite Workers, and Leon DesJardin, president of Local 93, International Brotherhood of Paper Makers. Provided for in the new contract are wage increases of three cents an hour for firemen and two cents an hour for beating room employes and oilers, and one paid holiday a year, which will be New Year's day.

Written into the contract was a guarantee by the company of three-shift operation, with each shift getting in 40 hours of work before Sunday, a premium day on which double time is paid.

The contract further provides that mechanics shall not be sent home an hour earlier when they have been requested to work the noon hour, but will be paid time and a half for the noon hour period. Upward revisions will be made by the company in the incentive plan and new classifications of workers were written into the contract.

Continental Conciliatory

RIDGEFIELD PARK, N.J.—The Continental Paper Co. through Alan J. Woodfield, personnel relations supervisor, states that it is willing to arbitrate the question of the dismissal of the worker over whom the firm's 400 employes walked out on strike on July 5. Although the firm's contract with CIO's United Paper Workers had expired, both the company and the union were still operating under the old terms while trying to reach new ones.

Continental has notified the Federal Mediation and Conciliation Service that it will accept an arbitrator to settle the present dispute. Mr. Woodfield points out that considering the eight cents an hour paid by the company to a pension fund, Continental is paying as high a rate as anyone in the industry.

From other sources, it is reported that there is a good chance the dispute may be resolved shortly.

Paper Firm Sets Parley Date

CUMBERLAND, Md.—The West Virginina Pulp & Paper Co. will open contract negotiations August 8 with three union locals representing plants at Luke, Covington, Va., and Williamsburg, Pa. The current contract which expires August 20 covers 4,200 hourly workers. Talks will be held at the Hotel Roanoke, Roanoke, Va.

Company officials who are expected to sit in on the negotiations are: Raymond Crush, assistant mill manager at Covington; James Towsen, company vice-president; William Staples, company publicity director; Daniel Staley, training director at the Luke plant; John Flook, staff member at the Williamsburg plant, and Paul Lacy Jr., staff worker at the Covington plant.

FOREIGN . . . . . .

Australia

Total imports of newsprint during March were 13,027 tons (12,742 tons in reels and 285 tons in sheets). Sweden and Norway were the principal suppliers, with Finland third and Canada in fourth place.

Imports of other printing papers during the month were: (All in hundredweights of 112 pounds)—Antique, 230 (Sweden 204, U.K. 26); imitation art, 893 (Norway 490, U.K. 384, Sweden 19); machine processed coated, 27 (all from U.K.); other coated printing, 286 (U.K. 265, U.S.A. 21); monotype, 19 (all U.K.); offset (except embossed), 290 (Sweden 197, U.K. 93); machine glazed litho, 1,469 (Sweden 909, U.K. 560); other machine glazed, 4,745 (Norway 2,771, Sweden 1,954, U.K. 29); esparto, one side supercalendered, 86 (all U.K.); one side supercalendered (except esparto), 1,089 (Norway 968, U.K. 121); two-sided supercalendered, 4,040 (Norway 3,998, U.K. 42); machine finished, 157 (Finland 110, Sweden 35, U.K. 12); other printings containing 25 per cent or less mechanical pulp, 3,995 (Norway 3,415, Sweden 434, U.K. 146); magazine and other printing, 15,406 (Sweden 11,349, U.K. 2,271, Norway 977, Finland 805, U.S.A. 4); and glazed imitation parchment, 317 (Finland 198, Australia 65, Sweden 54). The United States, it will be noted, supplied only 25 hundredweight.

Considerable progress is being made with construction of the Thomas Owen paper mill at Ballarat, and so far 207 crates of machinery have arrived from North America. The erection of this equipment, however, now depends upon the construction of the necessary buildings, but it is hoped that these will be completed by the end of the year.

* * *

At the recent annual meeting of Plyfiber, Ltd., the chairman of directors, N. Conrow, stated that because of the continued and increasing shortage of steel and the diminishing availability of war disposals steel drums, the products of Plyfiber, Ltd., were in growing demand, and the company had unfilled orders on its books for more than 25,000 containers. But progress had been delayed for some months by the necessity to import suitable paper board. Local manufacturers, however, now propose to produce a quality of paper board suitable for the company's containers for the bitumen industry and a new line of containers with metal chime, top and bottom, has been developed for dry products such as chemicals, powder paints, resins, etc.

* * *

The Western Australian Government Statistician, R. J. Little, states that during the first three months of the current financial year imports of pulp, paper and board into that State were as follows: Writing and typewriting paper—2,868 hundredweight valued at £19,326 (£14,648 worth from overseas); printing paper—29,224 hundredweight valued at £110,829 (£16,315 worth from overseas); wrapping paper—8,131 hundredweight valued at £46,120 (£5,831 worth from overseas); other papers valued at £22,564 (£14,945 worth from overseas) and paper boards valued at £23,400 (£4,274 from overseas).

* * *

J. R. Wright, the managing director of Wrightcel, Ltd., manufacturer of cellophane packaging, states that his company is planning the link up with British interests to expand the manufacture of such packaging in Australia, and new plant is now on its way for the new Melbourne factory which, it is hoped, will start production early in August.

C. F. Skinner, New Zealand Com-

THE MEAD SALES COMPANY
230 PARK AVENUE, NEW YORK 17, N. Y.
20 NORTH WACKER DRIVE, CHICAGO 6, ILL.

MEAD
pulp

DISTRIBUTORS OF WOOD PULP
BLEACHED AND UNBLEACHED
CHEMICAL AND MECHANICAL WOOD PULP

Paul Bunyan's sawmill on the Big Onion River ran at such high speed that it often produced more lumber and pulpwood than the market could stand. It had a reverse lever, however, that could send the sawdust, bark and planks back into trees ready for re-planting—the first reforestation program.

A reproduction of this incident from the fabulous life of Paul Bunyan—the forty-fourth of a series—will be sent on request. It will contain no advertising.

missioner of State Forests; A. R. Entrican, Director of Forestry, and a representative of the N. Z. woodpulp industry recently attended the World Conference of Wood Pulp Interests.

UK Dollar Slash Hits Canada

OTTAWA—The announcement by the British Chancellor of the Exchequer, Sir Stafford Cripps, that the United Kingdom is slashing dollar buying by 25 percent this year, including imports of paper and pulp among the principal items, has been received with concern here since Britain's purchases of such Canadian products are considered important, especially at a time when there is much loose talk now about trade difficulties in the making and the possible contraction as well as general narrowing of market opportunities for pulp and paper products as a result of the dollar shortages in various countries.

The significance of the British Government's move is reflected in the belief that this latest slicing off of British buying of Canadian pulp and paper may affect the industry's plans in the near future. So far there have been no forecasts as to what these effects are likely to be immediately, but there is no doubt that this reduction in purchasing will have a direct influence on some phases of the industry's operations and plans for the immediate future.

In the first quarter of 1949, the United Kingdom's purchases of pulp and paper products were as shown in the accompanying Table I, according to official sources of the Canadian Government, with figures for the corresponding period of 1948 being given in brackets and the over-all table illustrating what British purchases in Canada will now be affected by this latest "austerity" move.

UK Cuts Newsprint Imports

TORONTO, Ont.—Out of the parley of financiers at London this week comes the information that one of the measures to be taken by Great Britain to save dollars is to be a 25 percent cut in newsprint imports from Canada. Thus one more obstacle will be added to Canada's already shrinking overseas trade. Inability to buy Canadian newsprint because of trade and currency difficulties is forcing other countries to develop domestic newsprint industries and it is feared here that a prolonged shortage of dollars may mean the permanent loss of some of Canada's overseas markets.

Up to the end of May, overseas newsprint exports were down nominally —less than 1 percent from last year. Total exports are about 6 percent above last year due to the increased shipments to the U. S.

A glance at the list of overseas buyers indicates the trend which newsprint men have been watching for months. While Central America, British Isles, Africa and some others have increased their purchases of Canadian newsprint, other areas have cut their imports by almost half. India has projected a newsprint industry using wood from a tropical tree. In New Zealand, successful plantations of Monteray pine are said to have made a newsprint industry there an economic undertaking. These trees were originally taken from Southwest United States. Trees grow exceedingly fast, as much as five feet a year, which assures a continuous supply of pulpwood, it is said. In South America, both Brazil and Argentina are attempting to develop newsprint production; the latter country is now calling for tenders from possible manufacturers.

Since the war, the loss of the overseas market to Canadian newsprint has made little difference, as the U. S. has been able to absorb all this country could produce.

TABLE I

United Kingdom Purchases from Canada, First-Quarter 1949

Pulpwood, Pulp, Paper and Paper Products

(Figures in Parentheses, First Quarter, 1948)

Articles	*Quantities (CWT)*	*Values ($)*
Wood pulp sulphate kraft blchd	2,021(nil)	15,524(nil)
Wood pulp sulphate kraft unbl	99,796(84,587)	510,800(508,703)
Pulp Sulphite bl dissolving	229,442(211,884)	1,827,411(229,442)
Pulp sulphite bl paper grades	38,278(21,644)	242,257(125,005)
Pulp sulphite unbl strong	218,517(190,344)	1,276,684(1,106,636)
Pulp sulphite unbl news grade	nil(38,504)	nil(222,377)
Wood pulp mechanical	57,838(67,534)	251,387(228,664)
Pulp screenings mechanical	6,478(nil)	8,746(nil)
Pulp and fibre wallboards	nil(13,758)	nil(68,076)
Paper board nop	70,377(118,336)	479,608(697,875)
Book paper	52(nil)	841(nil)
Newsprint paper	191,529(43,199)	856,387(187,837)
Wrapping paper coated	274(246)	4,924(10,661)
Wrapping paper kraft nop	2,841(11,546)	89,394(31,092)
Wrapping paper nop	nil(505)	nil(3,409)
Boxes and cartons of paper	nil	nil(677)
Hangings or wall paper	4,678(10,449)	794(2,033)
Roofing and building paper	630(3,442)	8,163(41,511)
Pulpwood other peeled	3,072(nil)	86,042(nil)
Tissue paper	nil(1,194)	nil(15,402)
Writing paper nop envelopes	—	234(nil)
Paper and manufactures nop	nil	nil(112,266)
Paper nop	—	4,882(nil)
Manufactures of paper nop	—	3,918(nil)
Books bound or unbound	—	12,068(184,984)
Printed matter nop	—	10,784(6,979)
And other products.		

Pulp, Paper and Prod. to U. K.

WASHINGTON — Pulp, paper and paper products authorized for procurement during the week ended July 16 included $190,000 on account of second quarter allotments for the United Kingdom. No newsprint was included. The products are to be purchased in this country.

Italian Import Forecasts

OTTAWA — Forecast of imports into Italy for the 1948-49 fiscal year includes from dollar and other currency areas $147,000,000 worth of paper and cardboard, probably woodpulp, according to a report from Rome to the Foreign Trade of the Canadian Government. This is 10.5 percent of the total such imports in this period.

Finland Staging Comeback

OTTAWA — Olavi Lahonen, new Secretary of the Finnish Legation here, said Finland shortly will be back in the pulp and paper markets of the world which she plans to re-enter. He also stated that, by a touch of irony, Russia is helping turn Finland into an industrial country to meet her demands for war reparations. He indicated that Finland has paid considerably more than half of the reparations.

Thailand Expansion Contemplated

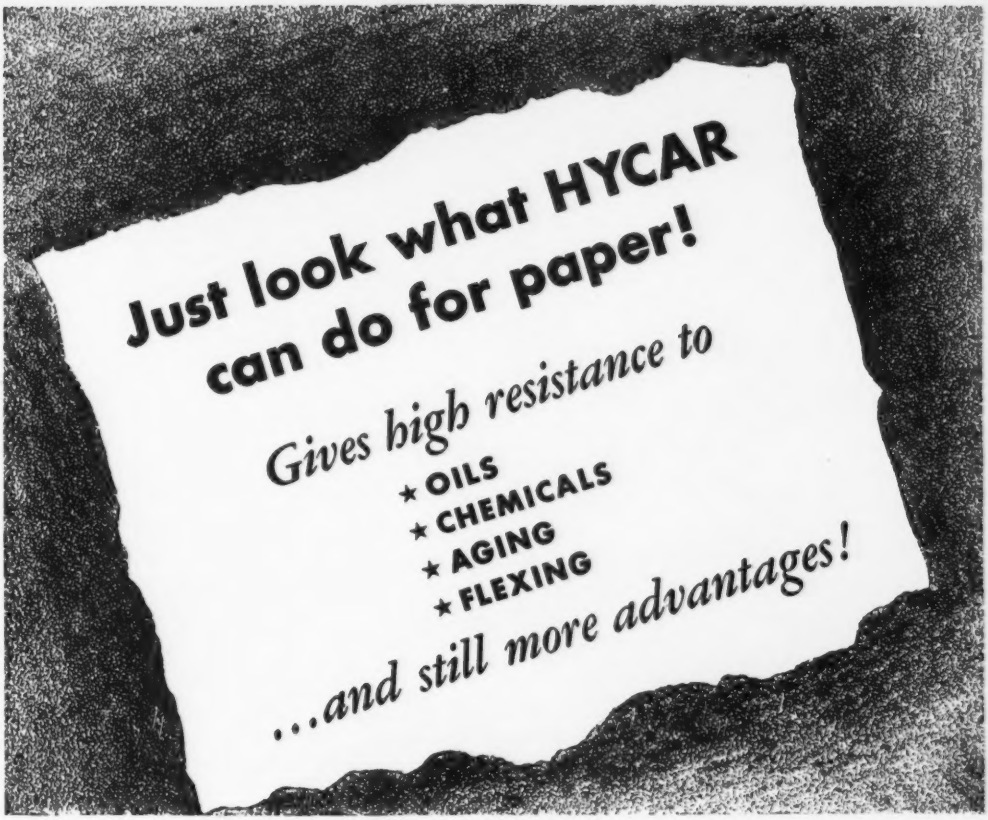
SINGAPORE — Present establishments engaged in the manufacture of paper are to be expanded both with respect to capacity and variety, states Paul Sykes, Canadian Government Trade Commissioner, in a report about market conditions in Thailand.

MISCELLANY . . . .

U. S. Customs Problems

NEW YORK — The importer of a Canadian watermarked sulphite bond paper has abandoned his claim that the paper was properly dutiable at one-fifth of one cent per pound and five percent as printer paper, according to Warren B. Bullock, manager of the Import Committee of the American Paper Industry. Customs officials had levied a duty of three cents per pound and 15 percent, the rate for writing paper, and the importer carried the case to the United States Customs Court, but later abandoned his claim when the case was called for trial.

New cases in United States Customs Courts include protests by importers of two large shipments of Canadian



★ Hycar American Rubber Latex, used as a coating or impregnant, gives paper new properties that make possible a wide range of profitable applications.

It makes paper highly resistant to many damaging factors. It increases tear and wet strength—makes soft but strong smooth-draping sheets.

Hycar latex may be added to paper before or after sheet formation. It can be used to modify other resins used in coating or impregnation. It can make phenolics tough instead of brittle. It can plasticize vinyls *permanently*—eliminate plasticizer migration.

Moreover, Hycar-based adhesives permanently bond paper—as well as wood, leather, aluminum foil, vinyl films and other materials.

Best of all—Hycar latex can be used safely, simply, easily. No vulcanization is required. Normal drying times are used. No explosive solvents need be handled, nor are costly solvent recovery systems needed.

We will be glad to work with you on applications or problems relating to the use of Hycar latex. For more information, please write Dept. HH-8, B. F. Goodrich Chemical Company, Rose Bldg., Cleveland 15, Ohio.

Hycar
Reg. U. S. Pat. Off.
American Rubber

B. F. Goodrich Chemical Company
A DIVISION OF THE B. F. GOODRICH COMPANY

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers

toilet paper who object to the classification of their shipments as manufacturers of paper at 35 percent and claim the lower rate of 2½ percent and 7½ percent provided for tissue paper.

At New Orleans, an importer of paper for a newspaper claims that paper weighing over 35 pounds per ream, containing over 35 percent sulphite and more than four points in thickness, is duty-free as standard newsprint and not dutiable at the rate for printing paper as held by Customs officials.

U. S. Equipment to Canada

OTTAWA—Imports of paper working machinery into Canada from the U. S. amounted to $1,405,914 in the first quarter of 1949 as compared with $1,670,637 in the corresponding period a year ago; imports of cellulose machinery, $2,081 as against $10,260, and imports of logging machinery and parts, $681,419 as against $1,390,451. Paper mill machines and parts brought into Canada from the U. S. in this period amounted to $315,501 as compared with $456,094; pulp mill machines and parts totaled $98,455 as against $99,371; sawmill machinery and parts, $131,970 as against $85,834.

Quinalt Timber Goes Begging

HOQUIAM, Wash—Quinault Indian Reservation timber estimated at 545,000,000 board feet went begging when no bidders developed at a sale conducted here July 8 by the Tahola Indian Agency. It was the second time within two months that agencies advertising timber sales here had drawn a blank. Two other sales are scheduled for the future. Three days earlier a 250,000-board-feet block of timber in the Olympic National Forest near Quinault was purchased for only $700 by L. T. Plumb, the only bidder.

Canada's May Canal Traffic

OTTAWA—Canadian Government reports tonnage of freight through Canadian canals in May, 1949, included the following traffic, with figures for May, 1948, being given in brackets:

Welland Ship Canal: Pulpwood, 37,468 (17,736) tons; Paper, 27,596 (33,840) tons. *Sault Ste. Marie Canals:* Pulpwood, Canadian Lock, 17,774 (33,640) tons, Canadian & United States Locks, 95,378 (104,061) tons. *St. Lawrence Canals:* Pulpwood, 27,054 (28,738) tons; Paper, 12,200 (18,573) tons.

Canadian Asbestos Production

OTTAWA—Canadian Government reports production of asbestos in April as 16,002 tons compared with 61,590 tons in April a year ago and 11,770 tons in March this year, with the output in the first four months of 1949 dropping to 102,792 tons compared with 220,874 tons a year ago in the corresponding period. The decline in 1949 was due to strike at asbestos mines, the report adds.

Govt. Meets Waste Paper Men

WASH., D. C.—Government agencies are preparing to launch a detailed survey of economic conditions in the waste paper industry looking to a broad program designed to offset present depressed phases, following a meeting this week with representatives of both industry and labor in that field.

After preliminary meetings in New York and elsewhere, groups representing organized employers and union workers in waste materials conferred on July 18 with H. B. McCoy, director of the Office of Domestic Commerce, and H. E. Holman, chief of the Forest Products Div. of the Department of Commerce.

The meeting was held behind closed doors, as are most industry advisory conferences with Government agencies. However, in advance of the conference, it was indicated that a tentative agenda included: a canvass of supply and demand for waste paper and related materials, from the dealers' standpoint; factors contributing to the current situation, a presentation of the present conditions on labor in the industry.

The meeting was attended by a committee of waste paper dealers representing United Paper Dealers of N.Y.; the Waste Trade Industry, Chicago and N.Y.; Waste Material Dealers Ass'n. of Waste Paper; the New England Waste Material Dealers and other organized dealer and labor union groups.

Topics ranged from a discussion of the supply and demand situation and contributing factors to the attitude of pulp mills toward use of a larger volume of waste paper. After the meeting, it was stated by representatives that the Government was given a presentation of "economic distress in the industry," and was asked to aid in working out a stabilization program to "save the industry from destruction and prevent serious unemployment problems." Spokesmen for the dealers were reported to have advised government representatives that present conditions require a solution which is beyond the capacity of the employers and their labor to work out unaided. The government representatives were told by dealer spokesmen that all dealers are experiencing "tremendous economic hardships" through oversupply and lack of sufficient disposal markets. Among other factors, it was understood, the meeting was told that buyers are demanding higher grades of paper; and pulp supplies are now a serious competitive factor in relation to former use of waste paper.

Possibility that government agencies can work out some new industry outlets was seen as the principal hope of the industry, and government spokesmen assured the industry and labor representatives a thorough study would be undertaken looking into all phases of the situation, and with a view to working up a definite remedial program.

Sacandaga Reservoir "Lifesaver"

GLENS FALLS, N. Y.—Paper mills in this northern New York area have been able to operate during the current drought only because of the Sacandaga reservoir.

Within the space of six months, the Sacandaga reservoir has provided "wonderful proof" of its multiple-purpose functioning, first by holding back flood waters and then by furnishing sufficient water for the operation of mills in time of drought, Edward H. Sargent, chief engineer of the Hudson River Regulating district, states.

In a letter to E. Leo Spain of Glens Falls, a member of the Board of the Hudson River Regulating District, Mr. Sargent emphasized the importance of the reservoir to the business life of this city and vicinity.

The mean daily flow of the Hudson River at Glens Falls at present, according to the engineer, is 2,570 cubic feet per second, of which 1,730 cubic feet per second is water released from the Sacandaga reservoir and 500 cubic feet per second is water released from Indian Lake. Thus, it was pointed out, the total stored water release of 2,230 cubic feet per second constitutes 87 percent of the flow of the Hudson River at Glens Falls. For the entire month of June, according to the engineer, 75 percent of the flow of the Hudson here was water released from storage reservoirs.

"In other words," Mr. Sargent added, "all the mills from Corinth down the river would be pretty nearly flat but for the release of this stored water.

Industries along the Hudson River which benefit from the Sacandaga reservoir are assessed annually for their proportionate share of the cost of its construction and maintenance.

During the heavy rainstorm which struck this area last December 31, and January 1, causing serious flood conditions in some sections, the Sacandaga reservoir lessened the flood height in Albany and Troy by more than four feet. Mr. Sargent disclosed. It was possible at that time to store up a tremendous amount of water in the reservoir and this reserve has permitted a more even flow in the Hudson during the long drought.

Chemicals for Paper, $35 Million

WASHINGTON—Canadian pulp and paper industry expenditures for chemicals, including soda ash, caustic soda, salt cake, salt, sulfuric, muriatic acids, sulfur, lime, and others ,total nearly $35,000,000 annually, according to estimates reported to this country.

Tough Customers demand Tough Papers—

Now that mills are again competing for business, buyers of paper and board are tough customers. They demand tough papers, strong and flexible without being brittle.

Mills that rely upon over-heated drier rolls to remove water that should have been squeezed out at the presses are in for trouble.

Tough paper can be made only on tough felts. There are none tougher than Hamiltons. Install correctly specified Hamilton Felts at all your presses. Give them plenty of squeeze—and speed.

• From the thinnest tissue to the heaviest board there is a Hamilton Felt that will make your sheets better, faster, cheaper and tougher.

SHULER & BENNINGHOFEN, HAMILTON, OHIO

• **Miami Woolen Mills** •

Hamilton Felts

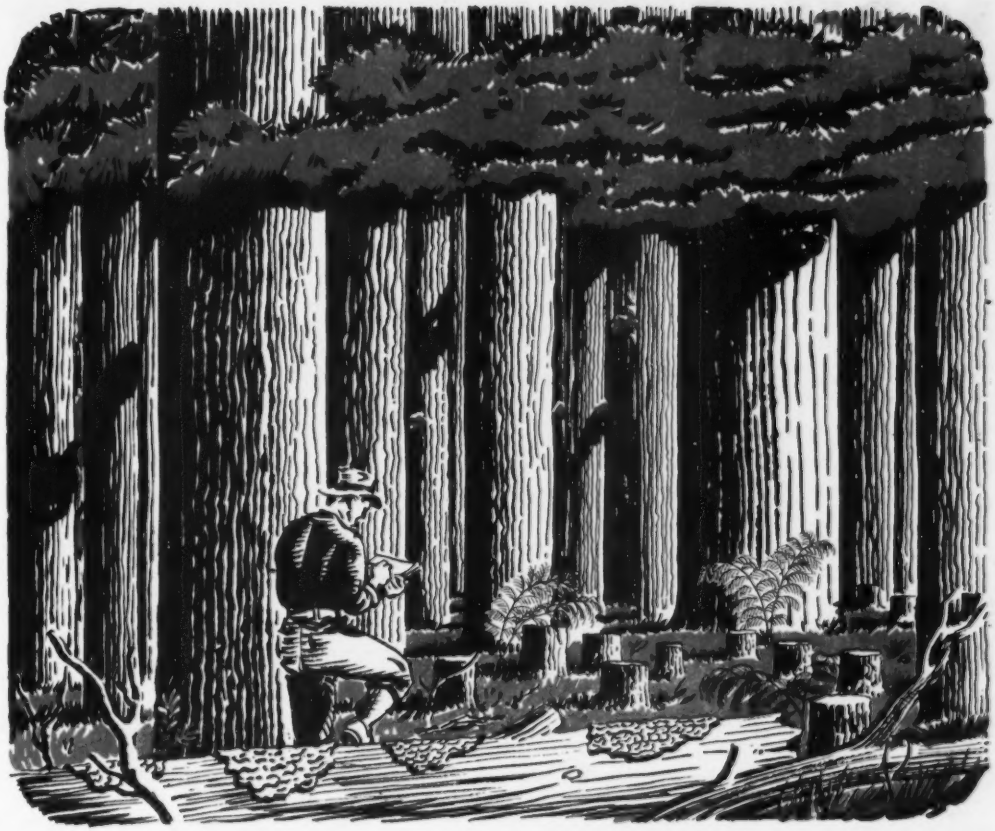
• **Established 1858** •

Imports of Pulpwood, Pulp, Paper and Paper Products

Into Canada from the United States, First Quarter, 1949

(Figures in brackets are for same period of 1948)

ARTICLES	QUANTITIES	VALUES ($)
Pulpwood	67(917)cord	1,679(16,460)
Sulphite pulp bl dissolving	12,354(15,288)cwt	118,248(131,768)
Sulphite pulp unbleached	113,686(119,830)cwt	602,214(609,711)
Sulphite pulp bleached nop	31,050(10,373)cwt	187,970(77,104)
Sulphate or kraft pulp	8,393(nil)cwt	54,906(nil)
Wood pulp mechanical	1,009(11)cwt	3,311(54)
Pulp of straw or veg fibre	20,366(10,631)cwt	205,707(20,366)
Millboard and binders board	1,363,477(1,096,607)lb	96,967(71,811)
Pulpboard for mfr of wallboard	5,031,782(2,652,570)lb.	215,563(127,534)
Pulpboard to wrap rolls paper	513,391(388,934)lb.	25,797(19,494)
Strawboard	215(40,000)lb.	53(1,769)
Test board for containers	252(8,307)lb.	61(632)
Wallboard building Board	28,045,579(654,394)lb.	31,093(509,572)
Pulpboard other fibreboard nop	816,928(689,794)lb.	147,418(115,547)
Electric insulating pressboard	295,378(278,207)lb.	61,776(55,660)
Feltboard roof felt not coated	1,466,005(99,622)lb.	49,559(5,506)
Pressboard nop	292,529(266,838)lb.	63,534(66,479)
Shoeboards	130,719(120,520)lb.	31,356(32,840)
Paperboard for shoeboards	162,626(118,723)lb.	25,509(17,196)
Carbon paper	43,904(47,970)lb.	43,676(36,367)
Book paper for periodicals	518,799(84,102)lb.	37,365(7,467)
Book printing litho paper nop	295,367(566,537)lb.	55,336(101,675)
Book printing paper coated nop	306,358(264,833)lb.	64,777(52,083)
Coated papers for Periodicals	167(nil)lb.	15(nil)
Cover papers not pasted coated	55,850(30,258)lb.	11,687(5,924)
Cover papers pasted coated	12,522(37,255)lb.	3,551(13,886)
Surface coated paper nop	233,632(315,333)lb.	96,011(111,986)
Waxed paper for wrapping nop	8,379(49,857)lb.	2,710(7,855)
Greaseproof and glassine paper	116,629(142,896)lb.	23,650(29,772)
Tissue wrapping paper	11,389(519)lb.	2,146(136)
Vegetable parchment paper	183,924(47,300)lb.	44,910(12,669)
Wrapping paper kraft	14,331(55,013)lb.	1,907(5,249)
Wrapping paper oiled coated	8,845(170,616)lb.	2,254(17,880)
Wrapping paper all kinds nop	35,042(236,276)lb.	6,930(29,183)
Duplex backing paper	190,165(216,832)lb.	63,648(73,739)
Wrapper sheets and heads	173,631(150,101)lb.	10,035(8,266)
Bond and ledger papers uncut	118,486(1,227,062)lb.	26,938(143,288)
Envelopes	406(945)M	2,246(4,087)
Onion skin and manifold paper	37,817(45,385)lb.	29,093(26,347)
Boxed paper and Papeteries	13,139(11,297)lb.	7,195(5,733)
Waste paper	177,499(274,195)cwt	138,826(339,051)
Electric cable insulating paper	479,909(294,731)lb.	175,607(104,670)
Photographers papers	—	249,660(195,920)
Blotting paper not printed	8,965(304)lb.	1,844(57)
Cigarette paper ungummed	167,010(302,261)lb.	84,330(135,231)
Cigarette papers in packets	40(nil)	482(nil)
Crepe paper decorative rolls	4,248(344)lb.	1,513(188)
Gummed paper	49,303(167,849)lb.	16,471(48,208)
Hangings or wall paper	67,304(1,096)lb.	16,422(741)
Paper for shot shells gun wads	135,086(208,825)lb.	27,429(37,801)
Papiermache ware nop	1,167(339)lb.	344(253)
Paper decalcomania	32,444(28,109)lb.	11,142(10,744)
Paper matrix for printing	175,516(227,677)lb.	48,506(54,950)
Paper matting for mfrs	44,457(15,798)lb.	18,698(6,475)
Paper photo baryta coated	309,880(200,676)lb.	106,323(56,036)
Roofing sheathing paper prepared	999,332(582,550)lb.	93,972(43,199)
Tissue paper nop	242,111(97,748)lb.	44,694(14,268)
Toilet paper	153,568(nil)lb.	19,828(nil)
Towels and napkins plain	8,207(2,232)lb.	2,117(723)
Waxed stencil paper	11,179(13,821)lb.	14,813(16,532)
All kinds of paper nop	768,295(530,192)lb.	204,475(132,950)
Tissue paper for stencils	100(nil)lb.	153(nil)
Facial tissues handkerchiefs	1,913,149(1,345,042)lb.	284,295(192,373)
Paper napkins nop	16,576(494)lb.	7,889(236)
Carbonizing tissue paper	30,997(82,886)lb.	7,775(22,351)
Cable insulating paper nop	65,039(86,081)lb.	15,803(20,203)
Cash register paper	825(14,967)lb.	197(3,294)
Filter paper	111,818(56,206)lb.	90,718(43,946)
Tabulating paper and stock	958,254(832,084)lb.	102,552(80,342)
Bags and sacks of paper	288,367(442k867)lb.	40,253(66,312)
Paper protectors far plants	—	3,899(16,286)
Containers paperboard nop	419,139(667,934)lb.	114,244(195,166)
Milk bottle caps of paper	nil(nil)	—(2,037)
Paper tubes and cones for yarn	48,423(40,535)lb.	24,506(20,401)
Paper patterns boot and shoe	—	8,426(4,848)
Pocket sputum cups and refills	—	—(190)
Twine Yarn paper for Furniture	20,511(29,401)lb.	4,428(8,187)
Window blinds of paper	—	129(186)
Manufactures of paper nop	—	957,361(518,991)
Paper cores	599,671(583,541)lb.	19,790(19,716)
Paper cups dishes tableware	—	4,892(4,335)
Paper doilies and lace Paper	171,457(50)lb.	63,822(25)
Paper novelties flowers games	—	2,625(5,434)
Paper patterns nop	—	97,405(55,536)
Shipping containers	1,107,716(1,375,094)	111,271(127,001)
Trays for packaging apples	13,988(nil)lb.	1,972(nil)
Artists proof etchings	—	137(619)
Admiralty charts manuscripts	—	6,193(6,431)
Newspapers or comic sections	—	85,015(65,696)
Magazines newspapers unbound	—	2,877,871(2,602,649)
Paper for duplicating machines	1,482(nil)lb.	1,930(nil)
Advertising and printed matter	979,112(813,633)	810,862(676,073)
Bank notes printed matter nop	—	240,961(348,162)
Labels tags tickets	—	36,556(29,722)
Blank books ruled or Plain	—	2,918(6,124)
Text books for schools college	—	423,405(505,396)
Books printed periodicals nop	—	1,157,595(1,089,655)



THIS IS PRE-LOGGING

Pre-logging is the harvesting in advance of smaller trees which otherwise would be damaged or destroyed if left until the big trees are logged. This isn't as simple as it sounds. To pre-log efficiently meant devising special new and mobile logging equipment.

However, the effort is justified in the recovery of many cords per acre of good clean material, highly desirable in the manufacture of sulphite or sulphate pulp.

Pre-logging fits into the method of "block" harvesting as used in the Douglas fir region, where forest lands are clearcut in a patchwork pattern, leaving blocks of seed trees as a source of regeneration. This is all part of the cycle of growth, harvest and regrowth known as Tree Farming.

Weyerhaeuser's use of the pre-logging method is another step toward more complete utilization of the timber crop.

YES! GO WEST!
1949 Fall Meeting TAPPI Portland, Oregon

PULP DIVISION

WEYERHAEUSER

YOU GET AND HOLD

. . . regardless of changes

G-E single-motor drives for lineshaft-driven paper machines keep any pre-set speed with pin-point accuracy—provide simple, flexible operation over a wide speed range—help maintain uniform weight and quality of the sheet!

It's no trick at all—with General Electric single-motor drives—to control machine speeds with high accuracy. Thanks to a unique partnership of tachometer generator, electronic amplifier, and amplidyne exciter, pre-set motor speeds are closely held—no matter how the load fluctuates.

To bring out the best in your lineshaft-driven machines—

—You get stable, "hunt-free" performance over the entire speed range.

—Pre-adjustment of rate of acceleration frees operator for other duties.

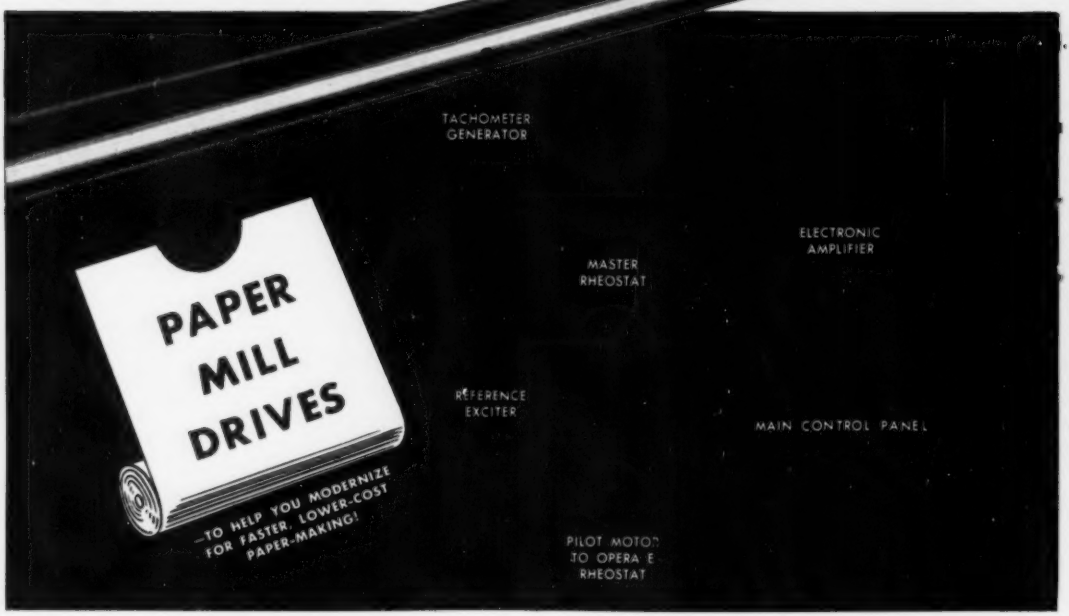
—You can readily adapt this flexible drive to suit machine conditions, with motor connected to the line shaft directly by belts or chains, or through speed reducers.

—Installation is simple, maintenance costs low, service continuity high.

—Easy installation adjustment permits close tuning of the drive to any combination of inertia and friction loads.

Here's the full story!

G-E single-motor drives designed to give added efficiency to your line-shaft-driven machines are described in a new bulletin, GEA-5288. A copy is yours for the asking. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*



THE SPEED YOU SET

in load!

LINESHAFT MOTOR

AMPLIDYNE GENERATOR

MAIN GENERATOR

EXCITER

Easy to operate—one dial does it!

To control the speed of the drive, the operator merely turns an indicating dial to the speed setting desired. A pilot motor then turns the master control rheostat to the corresponding position. Rate of acceleration—controlled automatically by the pilot motor—can be adjusted over a wide range. If the drive is stopped and then re-started, it will automatically accelerate up to the speed pre-set on the operator's dial, with no re-setting needed.

GENERAL ELECTRIC

The Paper Market

Report Prepared by the Paper Committee of the National Ass'n. of Purchasing Agents, under the supervision of Chairman T. A. Corcoran, Courier-Journal and Louisville Times Co., Louisville, Ky.

The entire paper market in all grades, even including newsprint, is feeling the effect of ample supplies. Price reductions are forthcoming almost monthly.

It is doubtful if anyone in the industry could have really believed the wartime sellers' market would be stabilized on such a high plateau.

These reductions are healthy for the industry and those who trade with it. They represent the first steps toward a stabilized price structure that will enjoy the confidence of the users of the products. They should be welcomed as they will produce a normal flow of business very close to real demand, with adequate stocking of inventory by those who should do so at safe and reasonable levels.

The consumers of paper overbought, under threats of scarcity until 1948 and, in using this excess inventory of suspect price and quality, have bought less than they used in 1949. The coming months should see purchases more in line with the normal sales and demand of consumers and, if its product is realistically priced in the future months, a stabilized price level that will permit the maximum flow of the industry's products is possible.

Some shrinkage of profit margins and some few casualties can be expected. Those who can reduce breakeven points from wartime excesses and are willing to accept reasonable profits in line with normal conditions should have no fear of the future.

WOOD PULP—*By H. L. Weber, Fibreboard Products Co., Inc., San Francisco, Calif.*

About the only thing that has happened to wood pulp since our last report is that prices on all grades have been reduced for third-quarter deliveries. This even extended to the bleached grades which have, up to now, pretty well resisted price declines.

The prices of Scandinavian pulps seem to be running off in several directions at the same time, apparently trying to find some spot that will produce some orders for their pulps in this country.

Obviously, the supply of all pulps is adequate, and it is rather apparent that this condition will continue for some time to come.

KRAFT PAPER—*By T. H. Treadwell, W. C. Ritchie & Co., Chicago, Ill.*

Although tonnage produced is off, due to lessened demand, the price of kraft paper appears to have stabilized during the past month. Unless there is a reversal of the present trend in general business conditions, still lower prices on kraft can be expected.

FINE PAPERS—*By E. E. McCulley, Courier-Journal Job Printing Co., Louisville Ky.*

The market in fine papers continues very soft. In its present state, there just isn't enough business to keep everyone busy a full week and there is considerable speculation as to when the pinch may influence some members of the industry to take more aggressive action, pricewise, than has been evidenced by the industry as a whole.

Reductions in the rag market have been substantial, as compared to sulphite reductions, and for many buyers the differential between rag and sulphite is so small that considerable amounts of business that normally would find sulphite adequate have been diverted to 25 percent rag because it appears to be a better buy.

The 16-lb. penalty insisted upon by the sulphite mills further increases the sulphite-rag spread, as the rag bond market has offered 16-lb. and 20-lb. bond at the same prices for months.

In the coming months, with business continuing at its present or reduced volume, current asking prices will become increasingly difficult to maintain. The greatest pressure, pricewise, can be expected on the sulphites and this pressure will not be eased by token reductions. To insure sulphite's getting that share of the market to which it is historically entitled will require an elimination of the penalty on 16-lb. weights and a price reduction of sufficient size to preserve a logical spread between No. 1 sulphite and 25 percent rag.

There is considerable feeling that, if this is done, prices can be stabilized at that level and a more normal flow of volume will result.

BOOK PAPER—*By Ralph N. Betts, American Education Press, Inc., Columbus, Ohio.*

As short a time ago as twelve to eighteen months, we were predicting and hoping that increased machine capacity would give tonnage relief, not only in the book paper field, but in others as well. Beginning in the early Winter of 1948, a slight market reversal began to be noticed, culminating this Spring, and definitely in the second quarter of 1949, in a definitely weaker price market and a market of adequate supply. In the last 90 days, we have notice of several mills which have discontinued operation completely. This has come about for several reasons: primarily, of course, lack of orders, and, secondly, because certain nonintegrated mills were unable to compete in the present market.

Vacation periods, which are being combined with total shutdowns, are much more in evidence than in the past year. This should have a tendency to prevent the market from softening much more than it is at present, for the reason that 40 or 60 large producers being out of production from one to two weeks the early part of July, will remove a tremendous amount of tonnage from the market.

When Government Printing Office third-quarter requirements bids were opened, every lot number was covered with a bid. It is of further interest to note the wide range of prices quoted, in some instances, as much as 1c per pound.

In previous reports, it was stated that the cheaper grades would be the last to feel the present market. This condition has now come about. Recently, at least four large producers of free sheet and groundwood book who a short six months ago were giving the cold shoulder, have offered supplies.

There probably will be further downward revisions in book paper prices of all grades through July and August. These will be spotty and not generally applicable to all book grades in the same proportion. By Fall, the result of mill closings and reduced inventories should, at least, bring a leveling-off in the market.

NEWSPRINT—*By T. A. Corcoran.*

First, let me clear up a statement in last month's report. We stated: "Daily newspapers reporting to A.N.P.A. had a 45-day supply on hand at the end of April." The correct figure should have been 38-day supply. The figure we used was the supply for all the U. S. users' as projected by the Newsprint Association of Canada. The A.N.P.A. figure for the end of May for 525 newspapers is 35 days' supply. The projected figure for all U. S. users for the end of May is 45 days' supply.

Newsprint has been the last of the papers to ease up. But, it is definitely softening now. The contract price has remained firm at $100.00 per ton delivered at New York. The spot price, however, has collapsed. Foreign tonnage and U. S. tonnage from marginal mills, which brought double the contract price a year ago, are now obtainable at the contract price. In fact, a few distress sales have been reported at 10 percent to 15 percent below that figure.

Consumption in May continued at a record-breaking level. All U. S. users consumed 496,471 tons, which actually exceeded receipts by 18,380 tons. However, for five months of this year, supply available to U. S. users—2,276,260 tons—held slightly ahead of consumption—2,239,834 tons.

BOXBOARD—*By Stuart Edgerton, United States Rubber Co., New York City.*

Supply — plentiful to the point that price concessions are obtainable on any good size order.

Demand — average.

Price — still going down; so, it is advisable to buy on quotation basis only.

Quality — as good as you specify.

PAPER CONTAINERS—*By Lee R. Forker, Quaker Stock Oil Ref'g. Corp., Oil City Pa.*

Reports indicate that the paper container demand, from a nation-wide viewpoint, is very much in conflict. A trickle of rush orders is reported from some areas, indicating very low inventory, whereas, for other sections, business has picked up indicating that some products packed in paper are moving very briskly. A factor not to be

SAVE LABOR
SAVE DOLLARS

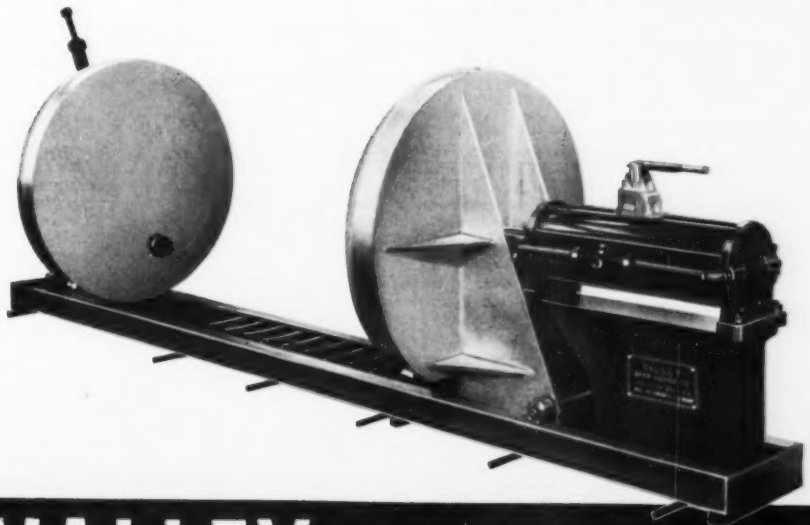
in the Wrapping of Your Jumbo Rolls

For Rolls 36" to 40" Diameter and up to 72" Long.

Can also be provided for Scale Mounting, for Greater Convenience in Wrapping and Weighing.

Write for Detailed Information.

VALLEY
ROLL END PASTER



VALLEY IRON WORKS COMPANY
APPLETON, WISCONSIN

ignored is the present food packing season which is in full swing for many sections.

Conflicts in prices are also reported, with some very soft prices reported on the West Coast, and no change reported for the Middle West, Southeast, and New England.

Reports from paper container purchasing agents at the Chicago Convention indicated that inventories, generally, are very low and that commitments are being placed for firm shipments on a week-to-week basis.

In some instances, inventories have been increased, with very close scheduling, because of the current practice of vacation plant shutdown periods which will last through the Summer months.

New developments for paper containers were discussed at the N.A.P.A. Convention in Chicago, and copies of the presentation, as well as those given by members of the Container Committee, will be available through various publications to interested N.A.P.A. members.

WEST COAST CONDITIONS — *By Horace Duckenfield, Metropolitan Life Insurance Co., San Francisco, Calif.*

All paper items are in excellent supply and mill shipments are promptly made.

At present, a local warehousing strike has closed up the majority of local paper houses but shipments are being made from Los Angeles and other branches.

Earlier this year most of the local supply houses found themselves with an oversupply of paper which produced a local flurry in the prices which has now subsided. However, because of the strike condition business is extremely slow.

Most of the Western mills are working five days a week and are looking for business.

CANADIAN CONDITIONS—*By J. F. Stephenson, Kraft Containers, Ltd., Hamilton, Canada.*

There is very little further to report on paper conditions in the Dominion since last month. The supply still seems to be ample, with the exception of newsprint which is catching up, but so far is not in excess. Some mills report that there has been a slight improvement in order backlogs.

The general feeling is that consumers have now reduced their inventories to the limit and, with normal demands, production has steadied itself.

Prices remain stable and no great change is anticipated over the next few months. Quality is becoming better; colors are back, and new uses are found every day.

The holiday periods may slow up demand but, after they are over, it will give business a good start for the Fall.

SUPPLIERS . . . . . .

Black-Clawson Co., Hamilton, Ohio, reports formation in the United Kingdom of Black-Clawson International, Limited, with offices at 16 Catherine Place, London, SW 1.

John D. Haskell, general manager of the firm's Dilts Machine Works division at Fulton, N. Y., has been named managing director of the new branch in England and will be required to take occasional trips to England in looking after the duties of that office. Mr. Haskell said that his new duties will not interfere in any way with his duties at the Dilts plant and that he will continue to reside in Fulton. With modern flying scheules, he pointed out, it is easier to reach London than it is to look after business on the west coast of the U. S.

Mr. Haskell will leave for London on July 29 to spend two or three weeks abroad in the interest of B-C International. Mrs. Haskell will accompany him as her people still reside in England.

Other officers of the London company are Homer D. Martindale, chairman; Air Commodore T. C. Miller, deputy managing director; C. R. Crawford, director; Percy H. Fogg, director and chief engineer. Frank T. Peterson, of the Black-Clawson Co., will be in charge of the sales organization in Europe.

B-C International, Ltd., will be operated as a subsidiary of the Black-Clawson Co., with full control and responsibility vested in the American parent organization. The new company has been equipped to render engineering and sales service, on the full line of Black-Clawson equipment, to be manufactured in the United Kingdom to specifications and drawings supplied from America. The personnel of the new company is being augmented by technicans from the Black-Clawson, Shartle and Dilts organizations, who will be rotated on a liaison basis between the United States and the United Kingdom.

Black-Clawson Co. also discloses the taking over of the Kohler System Co., of Chicago (unwinding and winding machinery and flying pasting equipment). These products will likewise be available through B-C International, Ltd.

Sandy Hill Iron & Brass Works, Hudson Falls, N.Y., has signed contracts with Cartiere Burge of Milano, Italy, to supply the latter firm with more than one and one-half million dollars worth of paper making equipment. Marshall plan funds will help pay for a project to modernize and integrate the Cartiere Burgo Paper mills at Verzuolo and Corsico, Italy, following the approval of the project by the ECA. The announcement was made both in Washington and Rome. Sandy Hill completed its first contract with the firm in the late spring. At that time, Kenneth L. Seeber, erection supervisor at Sandy Hill, went to Italy to observe the placing in operation of a selective drive installation in one of the mills of this concern. The Italian firm already had advanced plans for rebuilding and modernizing in the 11 pulp and paper mills owned by this large company and as a result their engineer, Piero Bersano, arrived at Sandy Hill to begin preliminary negotiations soon after Mr. Seebers' return to Hudson Falls.

ECA approved the use of $1,650,000 in recovery funds for the purchase of machinery and equipment in the United States. The Cartiere Burgo Co. will furnish an additional one billion lire to meet other costs of the project. Machinery and equipment necessary for the project includes machines, and machine parts, electrical motors, piping valves, vats and various items of special equipment such as machines for groundwood production, fork lift trucks, control instruments and laboratory instruments.

Morris S. Rosenthal, president of Stein, Hall & Co., Inc., New York, was awarded the decoration of Officier du Merite Commercial by the French Chamber of Commerce in the United States. The medal and accompanying scroll were presented to Mr. Rosenthal by Raymond Dreux, French Commercial Counselor in Washington, in recognition of his services in behalf of international trade at a luncheon in Mr. Rosenthal's honor on July 8. In addition to his foreign trade activities Mr. Rosenthal is the author of books and articles on exporting and importing. Until recently he was a lecturer at Columbia University. During the war Mr. Rosenthal was assistant director of the Board of Economic Warfare, in charge of the Office of Imports. He is a trustee of the U.S. Council of the International Chamber of Commerce and chairman of two of its committees, director of the American Arbitration Ass'n., and a member of its executive committee, member of the Policy Committee and Foreign Commerce Department Committee of

ASTLEY TO DURKEE

A. B. (Sam) Astley has joined the F. G. Durkee Co., Syracuse, N. Y., where he will be in charge of manufacturing and production of dandy rolls and cylinder moulds . . . He comes to Durkee from the Cheney-Bigelow Wire Works.

MADE ROUND AND STRAIGHT

Such tolerances demand:

1. Highly specialized casting, machining and grinding equipment, and
2. The skill to get the most out of these facilities.

In the *world's largest specialty roll shop* at Ansonia, Farrel has the experience and equipment to produce accurately shaped rolls from 5" to 72" in diameter and up to 312" face.

Rolls are cast true and with accurate contours, which means that they require a minimum of machining to finish to size. Even large rolls are reduced in diameter by only a fraction of an inch in the combined operations of turning and grinding. This casting accuracy is responsible for the full uniform depth of hard chilled surface being retained nearly as cast—an assurance of long roll serviceability.

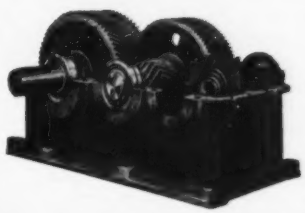
Grinding is done on Farrel two-wheel, swing-rest roll grinders equipped with the Farrel automatic crowning device, which unerringly produces the correct shape and amount of crown.

Write for full information on rolls, complete calender stacks, roll grinders and roll calipers. No obligation, of course.

FARREL-BIRMINGHAM COMPANY, INC., ANSONIA, CONN.

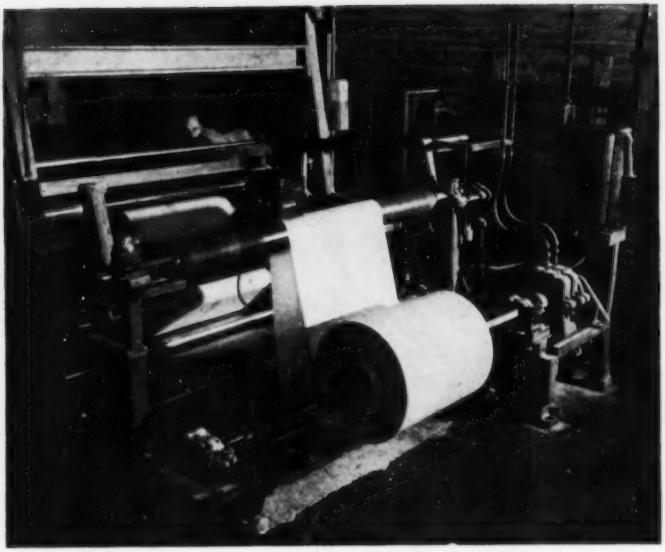
Plants: Ansonia and Derby, Conn., Buffalo, N. Y.
Sales Offices: Ansonia, Buffalo, New York, Boston, Pittsburgh, Akron, Chicago, Los Angeles, Tulsa, Houston

FB-491



FARREL SPEED REDUCERS are available in a wide range of ratios and capacities in single, double and multiple reduction units.
Gears are the Farrel-Sykes, precision-generated, continuous-tooth, herringbone type—the famous Gear *with a Backbone*. Roller bearings are used throughout. Cases are of ample strength and rigidity to prevent deflection and vibration.
Send for Bulletin 449 which describes these units in detail.

Farrel-Birmingham



ELECTRONICALLY GUIDED SLITTER-REWINDER

Waxed paper for bread wrappers is slit and re-wound in one electronically-guided operation on this machine in the Los Angeles plant of a waxed paper maker . . . Built by the Cameron Machine Co., Brooklyn, N. Y., this "Camachine No. 10" is controlled by a Westinghouse Type SC-2 slitter regulator. In this photo, the electronic scanning head can be seen in position in the middle foreground, over the controlled, moving rider roll. Impulses from the photoelectric cell in the scanning head are received in the control cabinet in the right background, which in turn governs the motor moving the unwinding roll and scanner roll to the right or left as required to keep the sheet edge straight as it unwinds at high speed from the roll in the foreground.

the Chamber of Commerce of the United States, president of the National Council of American Importers, and director of the Foreign Policy Ass'n.

J. L. VanNort, application engineer for the Reliance Electric & Engineering Co., Cleveland, Ohio, back from a five-week trip to England, Sweden, Finland, France and the low countries, reports that rehabilitation and modernization of European plants is proceeding rapidly in those steel, paper and textile industries where American machines equipped with engineered drives and built-in precision electrical controls are making possible higher operating speeds than manufacturers abroad have previously had available to them. His itinerary took him to Kauttua, Finland, for the start up of the first Reliance-driven super calendar to be installed in the plant of the A. Ahlstrom Co.

Hobart C. Ramsey, president of the Worthington Pump & Machinery Corp., Harrison, N.J., participated in special ceremonies at the Newark City Hall on July 10, commemorating the 400th anniversary of Newark-on-Trent, England. Bridging the Atlantic with a two-way broadcast arranged between Station WNJR, Newark, and the British Broadcasting Co., Mr. Ramsey felicitated the directors of Worthington-Simpson, in Newark-on-Trent for the role their organization has played in that community.

Harold L. Gruehn, formerly sales representative in the Allis-Chalmers Milwaukee district office, has been named Midwest region dealer supervisor with headquarters in Chicago, according to an announcement by B. F. Bilsland, manager of the company's Midwest region. The Midwest region embraces branches in Davenport, Rockford, Duluth, Evansville, Louisville, and Omaha, and district offices in Chicago, Indianapolis, Kansas City, Milwaukee, Minneapolis and St. Louis.

Sprout, Waldron Co., Muncy, Pa., reports that sales of its 36-2 refiner are now being handled exclusively in New England and the Southeast by Thaxter W. Small, with headquarters at Valdosta, Ga., and that William Converse will have charge of sales of Sprout-Waldron refiners in the balance of the United States. Mr. Converse has been representing the company in the Middlewest for the past several months. For the time being, he will continue to make his headquarters in Appleton, Wis. The new arrangement, effective July 1, coincided with the resignation of Frank C. Vaughan as manager of the firm's pulp and paper division.

American Cyanamid Co., New York, has assigned Vincent V. Lindgren and B. R. Putnam, Jr., to the New Product Development Department. Dr. Lindgren, who has been associated with the company for the past three years in its Stamford Research Laboratories, will devote his time to new product development activities. Mr. Putnam, who has been engaged in engineering development in the company's technical department, will be concerned with market research activities.

Hooker Electrochemical Co., Niagara Falls, N.Y., has named Allen L. Spafford field salesman in upper New York State and western Pennsylvania. His headquarters will be the Niagara Falls office. Mr. Spafford has been a Hooker process study engineer for two years.

Robert E. Cullen, director of acetate sales in the Du Pont Co. rayon department, Wilmington, Del., will retire next month after more than 34 years in the Du Pont organization. His successor will be named shortly.

Carl T. King, production manager of the plastics division of Monsanto Chemical Co., Springfield, Mass., has been appointed assistant to Felix N. Williams, vice-president and general manager. Robert K. Mueller has been named assistant production manager, to succeed Mr. King.

R. Jack Manning, of the sales division of the Du Pont Co., ammonia department, has been transferred from Wilmington, Del., to Needham, Mass., to work more closely with the paper industry in New England.

Babcock & Wilcox Tube Co., has opened a district sales office at 250 Boylston street, Boston, under the direct supervision of J. W. Bramley.

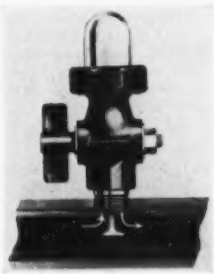
Norman C. Stephens has joined the chemicals department of the Quaker Oats Co., Chicago, where he will handle technical sales of furfural chemicals. He was formerly with the Union Oil Co., Oleum, Calif.

Standard Stoker Co., Inc., Erie, Pa., has acquired complete control of the Chicago Automatic Stoker. This spreader type stoker will hereafter be completely made in the Standard Stoker Co. plant in Erie.

EQUIPMENT

Sight Glass With Valve

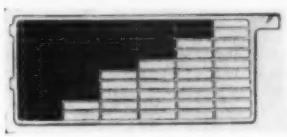
The valve type sight glass, originally produced for observing the clarity of hot water passing through hot process water treating systems, can now be used for studying the clarity or turbidity of transparent liquids flowing under pressure through pipe lines or in any system through which transparent liquids flow, the manufacturer states. Constructed so that differential pressure is established across the deflector to allow some of the liquid to circulate continuously through glass observation bowl. Special feature is



provided by the valve which permits the removal of observation bowl for cleaning, it is said. For details and prices write to Worthington Pump & Machinery Corp., Harrison, N.J.

"Z"-plate Batteries

"Z"-plate is anounced as a new line of diesel-starting, railroad air-conditioning and car-lighting motive power batteries which include a new grid, the result of years of laboratory research into lead porosity phenomena and grid casting techniques. Working from the established fact that the positive grid was the part of the lead-acid battery which wore out first, this grid was singled out as target for improvement. Studies showed that positive grids of all makes of lead acid batteries failed because the grid-members separated after performing a certain amount of work; further, that this separation was



caused by voids and porosity which invariably were present in the grid framework as cast. This porosity presented weak spots which permitted the sulfuric acid of the electrolyte to attach and finally separate the grid members. New casting rates and new mold-temperature control techniques were developed which are said to reduce grid porosity from 85 to 90 percent and thus to reduce vulnerability to sulfuric acid attack. Longer life and better electrical characteristics result, the manufacturer states. For details and prices write to Goul Storage Battery Corp., Trenton, N.J.

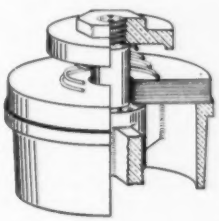
Low Voltage Static Eliminator

The low voltage static eliminator is announced as an addition to the manufacturer's high-voltage equipment. Consists of a power unit hung on a simple bracket which is attached to the machine; one or more inductor bars, one-inch O.D., with a stainless steel case; attachment fittings, cable guides and ducts. In the paper converting industry, the equipment is said to be specially suited to standard and special machines where space for inductor bars is limited or where individual type equipment is preferred. In use on pa-

per bag machines, envelope machines, and on special machines for handling tissues, glassine, cellophane, etc. For details and prices write to Chapman Electric Neutralizer Co., P. O. Box 268, Portland 6, Me.

Industrial Pump Valves

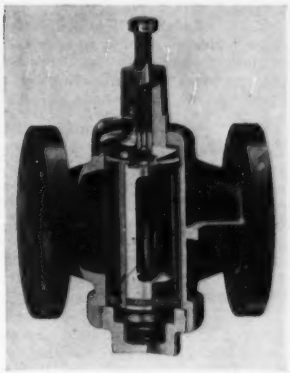
Industrial pump valves designed for reciprocating pumps in such uses as pipe line and refinery service come in bronze alloy with phenolic valve plate for operating temperatures to 300 degrees F. and pressures to 750 p.s.i.



For temperatures to 950 degrees F., the same design is available in stainless seat. Feature a three-web seat with center guide post cast as integral part of the hard bronze alloy seat; reversible phenolic valve plate; conical valve spring made of high-quality spring bronze (or steel) wire, designed to offer four pounds resistance, and to compress to height of 1/8 inch without coil clash; simple, threaded valve and spring retainer recessed to prevent damage to the conical spring when valve is fully opened; hexagoned crown of retainer designed to facilitate changing of valve plates without removal of seat. For details and prices write to American Iron & Machine Works Co., 528 North Indiana, Oklahoma City, Okla.

Lubricated Plug Valve

A lubricated plug valve constructed to compensate automatically for wear and thus to give longer leakless service is announced. Cylindrical plug of the valve is designed with a wedge action to adjust itself for wear, also keep the sealing surfaces of plug and body in continuous contact to provide a tight seal against leakage and lower lubricant losses. Line fluid pressure on plug also promotes the sealing effect, the manufacturer states. Specifications, suggested applications, and other



information included in Valve Reference Book, No. 39, Sec. 5, available on request to Homestead Valve Mfg. Co., Coraopolis, Pa.

LITERATURE

American Management Assn., 330 West 42nd street, New York 18, N.Y. Booklets, Packaging Series, No. 25, "Cost Controls for Packing, Shipping and Warehousing"; No. 26, "A Primer on Basic Types of Shipping Containers and Interior Packing Pieces"; No. 27, "Consumer Packaging—Its Technique and Psychology; No. 28, "Specifications For Package Materials and Design".

Alils-Chalmers Mfg. Co., Milwaukee, Wis. Bulletin, "Handbook For Care

of Centrifugal Pumps..' Tells how to figure head, carries tables to help determine total friction loss, offers causes and cures for various sources of troubles.

Bausch & Lomb Optical Co., Rochester 2, N.Y. Catalog D-104, "Phase Contrast Accessories", an article on proven uses of the phase contrast principle.

Brooks Rotameter Co., Lansdale, Pa. Bulletin No. 6, "The Full-View Rotameter." Sales copy and technical information on several new rotameters.

Cooper Alloy Foundry Co., Hillside, N.J. Chart, "Cooper Alloy Comparison Chart, Stainless Steel 2" Gate Valves". One of a series of detailed engineering comparison charts designed to assist in the selection of stainless steel valves.

Crane Co., 836 S. Michigan avenue, Chicago 5, Ill. Folder, "Crane Unit Fabrication." Details the advantages and economies of factory unit-fabrication of welded piping headers, assemblies and valve groupings into one-piece pretested units.

Chicago Metal Hose Corp., Maywood, Ill. Bulletin, "Expansion Joint Design Guide". An aid in the proper selection of size and type expansion joint necessary to fulfill varying requirements of temperature, pressure, etc.

Dow Corning Corp., Midland, Mich. Data Sheet, No. D-5, "Silicone Notes". Gives properties, performance and uses of silicone lubricants. Data Sheet, No. D-6, "How to Use DC 44 Silicone Grease in the Bearings of Electric Motors", includes instructions for lubricating open and single-shielded ball bearings, etc.

Dorr Co., 570 Lexington avenue, New York 22, N.Y. Bulletin, No. 9141, "Dorr Equipment and Methods for Modern Water Pre-treatment". Includes flow diagrams and convenient table of basic design data for plant units treating various types of water.

Dunod Editeur, 92 Rue Bonaparte, Paris 6, France. Book, "Les Méthodes de la Chimie de la Cellulose" by Ch. Doree, M.A. (Oxon.) D.Sc. (Lond.), F.R.I.C., translated from the second edition by Helene and M. Schene, 578 pp., price 2,500 fr. An experimental study of cellulose in its various aspects.

Eriez Mfg., Erie, Pa. Catalog, "Permanent Magnetic Separators and Electronic Metal Detectors". Supplies complete specification for weights, sizes and strength comparisons for various chute and spout magnets, also tables of operating capacities. Fully illustrated with photographs and engineering drawings.

Henry A. Gardner Laboratory, Inc., 4723 Elm street, Bethesda 14, Md. Brochure, "Photometric Unit and Exposure Heads" for Measurements of Appearance and Other Optical Properties of Materials.

E. J. Cody & Co., 134 N. LaSalle street, Chicago 2, Ill. Catalog, "New Testing Instruments for Weights, Structures, and Thicknesses." Illustrates and describes bursting strength testers, dial micrometers, corrugated liner micrometers, etc. Provides basis weight scales for weight by 480, 500 or 1000 sheet count of papers and tissues, also a boxboard scale which registers number of sheets per 50-pound bundle.

Hardinge Co., Inc., 240 Arch street, York, Pa. Bulletin, No. 47, "Automatic Samplers". Details the operating mechanism of unit and supplies typical installation arrangements for both wet and dry processes.

O. C. Keckley Co., 400 W. Madison street, Chicago 6, Ill. Catalog, 35th anniversary edition. Features precision and temperature regulators and allied equipment applicable to drying machines, heating systems, cookers and digesters in pulp and paper mills. Includes dimensions, capacities, engineering tables and specifications.

E. J. Labarre, Hilversum, Holland. Book, "Watermarks, Mainly of the 17th and 18th Centuries", by Edward Heawood, M.A., formerly Librarian to the Royal Geographical Society, London. Price £7.10.0 in paper covers, £8.10.0 bound half leather. From the imposing collection of watermarks gathered from the paper of atlases and geographical works found in the Royal Geographical Society of London, Mr. Heawood has selected about 3500, arranged in some 75 subject categories and mainly restricted to marks found in papers of the 17th and 18th centuries, though some uncommon marks of earlier dates are said to be included.

Minneapolis - Honeywell Regulator Co., Belfield Valve Div., Wayne avenue and Manheim street, Philadelphia 44, Pa. Bulletin 700-1, "Belfield Diaphragm Control Valves, Series 700, Pilot Piston Control Valve." Provides specifications, construction and materials for various valves, also dimensional tables, engineering drawings and base prices.

Minneapolis-Honeywell Regulor Co., Belfield Valve Div., Wayne and Roberts aves., Philadelphia 44, Pa. Bulletin 48-1, Belfield Liquid Level Controllers. Both direct-connected and air-actuated controllers are illustrated and described, with details of special construction features and typical applications.

McGraw-Hill Book Co., Inc., 330 West 42nd street, New York, N. Y. Book, "Dynamic Equipment Policy," by George Terborgh, research director of Machinery & Allied Products Institute. Purpose of the book, according to MAPI's president, W. J. Kelly, is to provide a *bible* of reference and education in requirement policy for industrial management. Illustrate application of MAPI formula with numerous examples from actual experience, also presents a replacement formula developed by the author over a period of many years of study and collaboration with executives in the capital goods industries.

Midwest Fulton Machine Co., Dayton 2, Ohio. Bulletin, "The Midwest-Fulton Line." Sales copy on the Midwest Pulper, hollander beaters, the Fulton dryer drainage system, and allied equipment for paper mills. Illustrated with typical installation photograps, diagrams, charts, etc.

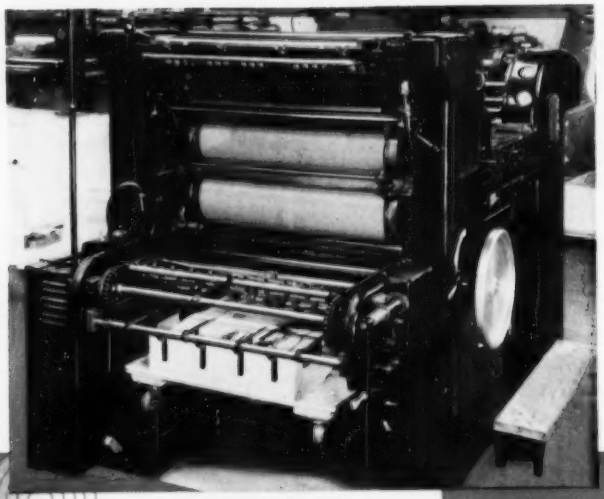
N. Y. State College of Forestry, Syracuse 10, N. Y. Folder, "What Kind of Men Are Foresters?" An index of the many technical specialists in wood which the college trains for the forestry profession.

N. Y. Belting & Packing Co., 1 Market street, Passaic, N. J. Catalog, "Industrial, Commercial and General Purpose Water Hose." Data on the construction, maintenance and use of water and water suction hose for agricultural, paper, automobile and construction industries included.

Technical Section of the Paper Makers' Assn., 1912 Inc., St. Winifred's, Welcomes road, Kenley, Surrey, England. Book, "Paper Making, A General Account of Its History, Processes, and Applications," 208 pp., price 6/- post free. Prepared under the direction of the Education Committee of the Technical Section of the Paper Makers' Assn. of Great Britain and Ireland. Covers the whole range of paper-making knowledge from pulp manufacture to converting processes, giving due prominence to British methods.

Solvay Sales Div., Allies Chemical & Dye Corp., 40 Rector street, New York 6, N. Y. Wall chart, "Precautions in Handling Chlorine and Procedure in Cast of Accidents. Catalogs and explains five preventive steps for protection of employees, handling chlorine; ten for location of chlorine leaks, and eight steps for first aid.

William L. Barrell Co., Lawrence, Mass. Book, "Barrell's Paper Annual, 1949-50 edition," edited by William Bond Wheelwright. Attractively printed in two colors, clothbound with plastic comb binding. Features the second in a series of illustrated articles on "Great American Research Laboratories," also a new section on the curricula of four colleges which prepare students for the pulp and paper industry: U. of Maine, N. Y. State College of Forestry, Institue of Paper Chemistry, and Western Michigan College of Education. Members of the paper industry who wish a free copy of the Annual should address the publisher.



offer your customers the superior printing surface of paper coated with

512K

A DOW LATEX

The paper industry is turning to 512K, a Dow Latex, for exceptional coatings that are adaptable to standard and unusual grades of coated stock.

512K permits the coating on a web of paper to flow more evenly against the rolls in the calender stacks—resulting in a smoother, more uniform coated finish with sufficient softness to provide a superior printing cushion. Also, of great importance is the improved flexibility of the sheet, made possible by the utilization of 512K in the coating.

Are you offering these advantages to your paper customers in the printing trade? Contact your nearest Dow Sales Office today for further information regarding 512K, A Dow Latex.

Coatings Section • Plastics Division, Dept. PC-7

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

DOW

RESINS • LATICES • PLASTICIZERS AND MONOMERS

New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago • St. Louis • Houston • San Francisco • Los Angeles • Seattle • Dow Chemical of Canada, Limited, Toronto, Canada

The Effect of Condensate and Air on Output, Quality and Steam Consumption of Paper Machine Dryers

By
ALBERT MILNES
Director, Sarco Company, Inc., New York, N. Y.

The efficient operation of the dryer part of a paper machine calls for co-operation between the engineer and the papermaker to a greater extent than is generally realized. If the problem were simply one of getting maximum heat transfer, the engineer would have the answer, but the papermaker must have roll surface temperatures that are even across the face, variable to suit the sheet being dried and that will remain steady for long periods without constant readjustment.

In asking for these conditions, the papermaker often does not realize the problem he has set before the engineer and so we find machines that are perfect from the engineer's standpoint and a nightmare to the papermaker and, of course, the reverse. The controversy on how to maintain correct surface temperatures has raged ever since the introduction of steam drying. At any rate, the arguments would be clearer if a few comparatively simple facts were kept in mind.

First, it is a mistake to assume that because a pressure gauge on the supply main shows the same pressure hour after hour, that the steam temperature and heat content remain constant. The pressure gauge for example, cannot tell us how much moisture the steam carries, nor can it tell the amount of air and other incondensible gases mixed with the steam. Moisture in steam lowers the available heat given up on condensation (and 30% wet steam is not so unusual as many engineers would have us believe). Unfortunately, there is no ready means of measuring the wetness of low pressure steam.

Air and gases in steam reduce the temperature according to the proportion of air and steam by volume in the mixture.

Table I

Reduction by Entrained Water in Heat Given Up by Condensing Steam

Steam Press., P.s.i.g.	Latent Heat, Btu per lb. Dry Sat.	5% Wet	10% Wet	15% Wet
5	961	914	865	817
10	953	905	857	810
15	946	898	852	804
20	940	893	845	799

Presented to the American Pulp and Paper Mill Superintendents Association, Annual Convention in Atlantic City, N. J., on June 15-17, 1949.

ALBERT MILNES

Table II shows the effect of varying percentages of air in steam at different mixture pressures.

The effect of both entrained moisture and air will be discussed later; I mention it here merely to show that the engineer is using a heating medium of which he rarely can be sure of the true properties.

Table II

Effect of Air on Temperature of a Steam/Air Mixture

Mixture Press., P.s.i.g.	Temperature, °F. Pure Steam	5% Air	10% Air	15% Air
2	219°	216°	213°	210°
5	227°	225°	222°	219°
10	239°	237°	233°	230°
20	259°	256°	252°	249°

Heat Transfer

The papermaker is interested mainly in the surface temperature of the rolls with which the sheet will be in contact. To get maximum output he must raise the temperature as rapidly as the sheet will allow and carry on the drying process at the maximum roll surface temperature he dare use. He is constantly between the devil of cocklin, curling and breaks, and the deep sea of low output. His job is made no easier by the laws of nature which say that heat flow is proportional to temperature difference, which makes it almost impossible for him to know the temperature to which the sheet is being exposed.

Figure 1 illustrates this simple but little appreciated fact by showing the section of a cylinder face. At "A" the surface is exposed to the atmosphere and with a steam pressure of 10 psi, the heat loss is probably about 300 Btu per square feet per hour with a surface temperature of around 239°F.

The roll at "B" is evaporating water from the sheet at a rate of say 3 lbs.

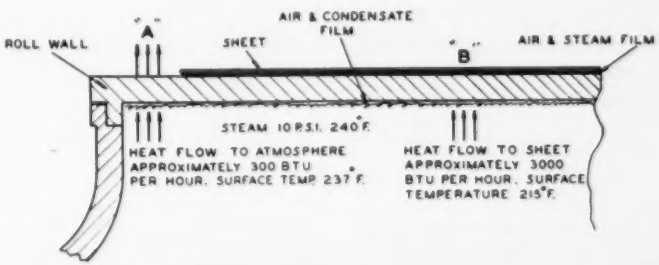

ROLL WALL
"A"
AIR & CONDENSATE FILM
SHEET
"B"
AIR & STEAM FILM
STEAM 10 P.S.I. 240°F.
HEAT FLOW TO ATMOSPHERE APPROXIMATELY 300 BTU PER HOUR. SURFACE TEMP. 237°F.
HEAT FLOW TO SHEET APPROXIMATELY 3000 BTU PER HOUR. SURFACE TEMPERATURE 215°F.

Figure 1. Surface temperature is a function of heat flow.

per hour or at a heat flow rate of 3000 BTU per hour. To increase the heat flow from 300 to 3000 BTU per hour, the temperature difference across the cylinder wall must be about 10 times greater. So, the steam temperature being constant, the surface temperature under the sheet — the only part that matters — must be reduced to about 215°F. Knowing the surface temperature of the uncovered portion of the roll surface is only an indication of probable conditions under the sheet. Should the temperature difference vary materially, the surface temperature will vary too and the drying rate both along and across the sheet will be affected.

The engineer must know what is likely to cause these variations and eliminate them.

Roll surface temperature under the sheet is affected by:

1. Roll thickness and material.

2. Steam temperature.

3. Any resistance to heat flow on the steam side of the wall.

Figure 2 illustrates these three points.

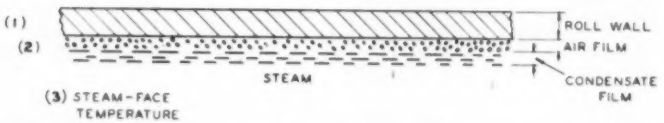


Figure 2. Surface temperature is affected by: (1) Roll material & thickness; (2) Resistance to heat flow; (3) Temperature difference.

ROLL THICKNESS: Most rolls are cast iron and machined inside and outside to give even wall thickness. The heat conductivity of cast iron is high so that the thickness has little effect on heat flow compared with condensate and air on the steam side.

STEAM TEMPERATURE: Unless the steam is superheated, its temperawill correspond with its pressure in accordance with the Steam Tables. Slight superheat in the supply steam will have no effect on final temperature because of the desuperheating effect of the condensate in the cylinder.

Non-condensible gases mixed with the steam will, as we have seen, reduce the steam temperature.

Heat Resistance

When the steam condenses on the heated wall, it deposits condensate and non-condensible gases. The rotation of the cylinder allows condensate to wash down the cylinder walls. Any oil in the steam, even small amounts from glands, tends to produce a non-wettable surface so that the condensate merges to form globules and rivulets rather than an unbroken sheet of running water. So once an air film forms it is not quickly washed away by the condensate, and the greater the amount of air in the roll, the greater the quantity that will tend to deposit on the heated surface.

The air and non-condensible gases fill the roll before steam is turned on, and steam generally contains gases generated in the boiler or occluded in the feed water. When rolls are run under vacuum, air can leak in through joints and glands.

Air and condensate are poor conductors of heat; for example, air offers about 1600 times more resistance to heat flow than does cast iron. In other words, a film of air 1/1600″ thick on the inside of a cylinder wall 1″ thick is equal to increasing the wall thickness to 2″ in its effect on heat transfer. But the engineer's problem in giving the papermaker the surface conditions he needs is not that heat transfer is retarded by condensate and air films nor that steam temperature is reduced by gases mixed with it. If the effects remained constant, the answer would simply be to increase the steam pressure to maintain the necessary temperature difference across the wall of the roll. The problem is that the effect is erratic. In the case of gas mixture with the steam, unless a considerable proportion of the air initially in the roll is released quickly when steam is turned on, it will mix with the steam in an unpredictable proportion. The air brought in by the supply steam will accumulate if allowed to do so and so tend to increase the proportion of air in the mixture as the hours go by.

It is often assumed that air, having a greater density than steam, must tend to collect in the bottom of a steam space. Two conditions make this impossible. The first is diffusion which causes gases and vapors in a closed space to intermingle. The second is the turbulence caused by the incoming steam which mixes the air and steam mechanically.

So the density effect is, in practice, offset by the combined effect of diffusion and turbulence. But in addition to diffusion and turbulence, we have the effect of velocity and direction of steam flow within the roll. The flow is generally in the direction of the cyinder wall in a closed cylinder and also toward the point remote from the inlet following the path of the steam. *Figure 3* shows this diagrammatically.

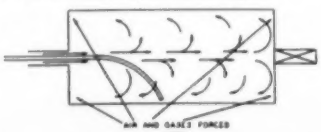


Figure 3. Probable points of concentration of air & incond. gases.

If the rolls are allowed to discharge into the condensate main, as in a stage heating system, there is a secondary flow toward the end of the syphon pipe.

The velocity effect largely offsets the effect of diffusion except in the case of very lightly loaded rolls using little steam. So the tendency is to force air or a mixture containing a high proportion of air into the dead space formed by the flowing stream. (See *Figure 3*). The reduced mixture temperature at one end of the cylinder not only reduces the surface temperature at that point but automatically produces unevenness of temperature across the roll face.

The thickness of the condensate film at any point on the heated wall depends on the rate of heat transfer (the rate of steam condensation) at that point. Little can be done about this, but should partial waterlogging of the roll occur, the blanketing effect reduces heat transfer. As the waterlogging effect is generally intermittent, uncontrollable variations of roll surface temperature result.

Wet steam of course, does not improve this situation because while the moisture does not add useful heat to the process, it adds to the condensate film thickness and retards heat transfer.

For efficient drying—which really means putting the papermaker in a position to control and maintain roll surface temperature—the engineer must meet these conditions:

1. Supply to the machine steam at the necessary pressure and as near as possible to dry saturated.

2. Make provision for simple control—either manual or automatic—of roll steam temperature (pressure).

3. Provide for rapid release of air when starting up and continous removal of any gases which collect during running.

4. Provide for the removal of condensate as quickly as it forms and under all conditions of pressure within the roll.

WHAT IS THE DRYING UNIT? So far we have considered only individual rolls. The dryer part may consist of many rolls and the papermaker considers the whole dryer part as one section. The need for variable surface temperature conditions in different parts of the machine, however, makes it impossible for the engineer to treat the dryer part as one unit.

GROUP TRAPPING: Provision can easily be made to discharge condensate and air into a common collecting main.

A suitable steam trap on the main will release all condensate which reaches it. But such an arrangement makes individual roll pressure control impossible as the pressure in the common main determines the minimum possible in any roll. Any attempt to

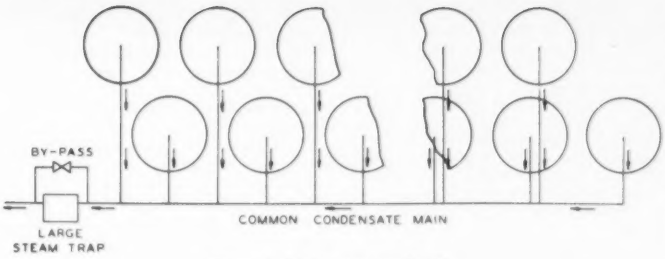


Figure 4. Group trapping of rolls.

reduce surface temperature on any roll will cause water logging of that roll. The whole system will also air bind.

Attempts have been made to make such an arrangement work by allowing excess steam to by-pass the trap. (See *Figure 4.*) If sufficient steam is by-passed to lower the pressure in the common main below the minimum required in any cylinder, conditions are improved, but only at the cost of excessive steam consumption.

By using the excess steam for, say vapor absorption air heating, the system is made more economical but the control of the dryer part is then at the mercy of the air heater. Any change of conditions in the heater will reflect on the machine.

Dividing the machine into sections is only a palliative as surface temperature variation on even one roll will upset the temperature gradient and the balance of the machine. See *Figure 5.*

Stage Heating

The principle of dividing the machine into sections and allowing the steam to pass along from the dry end section to the pre-dryer and wet end sections *(Figure 6)* is a further development of the grouping principle.

The increase in steam flow rate through the dry end and predryer sections aids air and condensate removal but, of course, has the serious disadvantage that it causes intimate mixing of the steam and air. Air from the dry and rolls passes first to the predryers and finally to the wet end rolls. The results of such a procedure have already been described.

The excess steam from the dry end section is closely mixed with condensate and therefore wet. Very efficient steam separators are needed to insure a reasonably dry steam supply to the remaining sections.

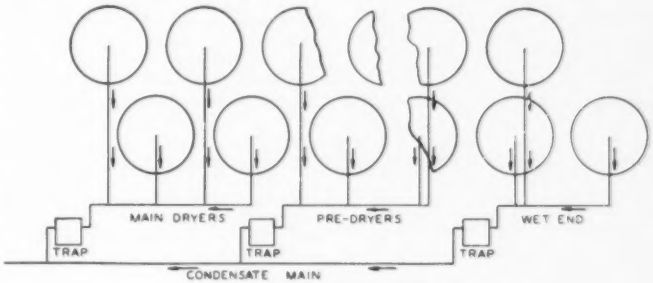


Figure 5. Drainage by sections.

A more serious defect of stage heating or blow through systems is that a minimum pressure differential is needed between stages dependent on the cylinder diameter (hydraulic head is the syphon pipe) and the amount of steam needed for the remaining sections. This pressure difference must always be less than the maximum difference between the supply steam pressure and that in the condensate discharge of the lowest pressure roll.

Any attempt to reduce the pressure differential below this minimum must cause waterlogging of the rolls, See *Figure 7.*

Any alteration made to conditions in one section are bound to upset conditions in the remaining sections, calling for re-balancing of the steam supply to the machine.

The addition of ejectors to each roll to take care of the pressure difference caused by the syphon does not alter the condition of having to control by sections.

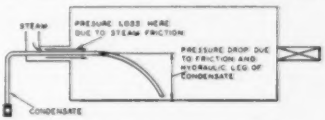

STEAM
PRESSURE LOSS HERE DUE TO STEAM FRICTION
PRESSURE DROP DUE TO FRICTION AND HYDRAULIC LEG OF CONDENSATE
CONDENSATE

Figure 7. Minimum pressure difference between sections of stage heating system caused by friction & hydraulic head of condensate in syphon.

The question must be asked: can the best conditions of even, steady surface temperature on all cylinders be given by treating the dryer part as one machine or as a small number of sections. The answer, in the writer's opinion, is that maximum output, quality and minimum steam consumption canot be obtained unless each roll is independent of the remaining rolls of the machine and proper provision made for continuous efficient removal of condensate and gases from each roll. Individual stem traps on each roll are not the answer as we shall see later that conditions arise in roll drainage that made the normal steam trap inadequate for this work. Apart from this, however, normal steam traps with the exception of the balanced pressure thermostatic type, have a very low air discharge capacity. At the same time, individual roll control must include means of making each roll independent of varying pressure conditions in the common condensate main of the machine or, in other words, individual trapping.

The special problem in the trapping of individual rolls is known as "steam

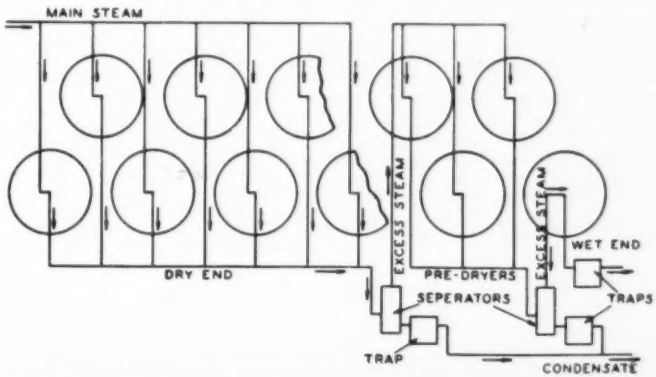


Figure 6. Stage heating, excess steam, air & condensate flows from dry end to predryers & wet end.

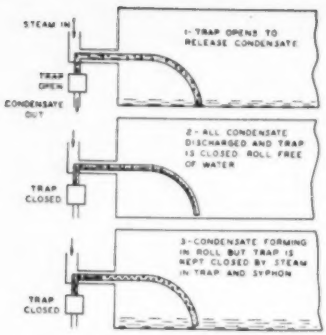

STEAM IN
1- TRAP OPENS TO RELEASE CONDENSATE
TRAP OPEN
CONDENSATE OUT
2- ALL CONDENSATE DISCHARGED AND TRAP IS CLOSED. ROLL FREE OF WATER
TRAP CLOSED
3- CONDENSATE FORMING IN ROLL BUT TRAP IS KEPT CLOSED BY STEAM IN TRAP AND SYPHON
TRAP CLOSED

Figure 8. Steam locking.

locking." See *Figure 8.*

When a steam trap is used to drain a roll fitted with a syphon water lifter, the trap must have a capacity greater than the maximum rate of condensation in the roll. It follows that there will be times when the trap, having released all the condensate reaching it, will close. The trap, connecting piping and syphon pipe are now full of steam at the same pressure as the steam in the roll. Condensate can only rise up the syphon because of a difference in pressure between the steam in the roll and the pressure at the joint. So, no matter how much condensate may collect in the roll, until the steam in the piping and trap condenses or is dissipated to reduce the pressure, the condensate cannot reach the trap to make it operate. The trap is then steam locked. Condensation due to heat loss from the exposed trap and rotary joint reduce the volume of steam locked in the pipe. Condensate rises in the syphon ppe but the pipe is, of course surrounded by the steam in the cylinder. As the condensate rises up the syphon, its pressure is reduced. The pressure at the rotary joint of a 5′ diameter roll is always about 1 psi less than the pressure in the roll when the syphon is full of water and this pressure reduction causes flash steam to be generated.

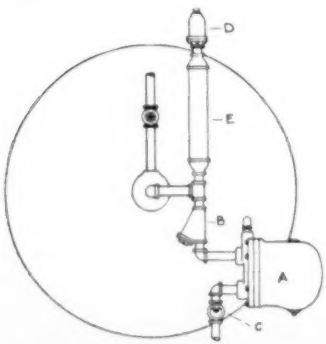


Figure 9. Roll draining & Air venting unit.

In the syphon of a 5′ diameter roll condensing 500 lbs. of steam per hour at 5 psi, nearly 35 cubic feet per hour of flash steam is generated by this pressure reduction. This keeps the trap supplied with steam instead of condensate and prolongs the time during which the trap is closed and the roll waterlogging. The writer has seen traps on paper machine rolls remain closed for as long as 20 minutes due to steam locking and flash steam generation.

Steam locking and the inability to handle large volumes of air account for the lack of success of individual steam trapping of many multi-roll machines.

A Rational System of Individual Roll Drainage and Air Venting

An individual roll drainage and air venting system must have these features:

1. Continuous release of condensate from the roll under all conditions of roll pressure without steam locking.

2. Continuous release of air and other gases particularly on starting the machine when large volumes of air must be handled.

3. Simple individual control of surface temperature as well as simple control of the over-all drying rate on the machine.

4. If wet end rolls must run at below atmospheric pressure, the remaining rolls should be able to supply flash steam for this purpose. A vacuum pump should handle air only from the wet-end rolls.

5. The installation cost should be reasonable, the system must be trouble free and maintainance cost must be low.

A combined drainage and air venting unit for individual rolls is shown in *Figure 9.* The normal syphon and rotary joint are used, the unit being coupled to the condensate connection of the joint.

Condensate is handled by the continuous discharge float-operated trap "A". The trap is designed with a capacity in excess of the maximum condensation rate and capable of operating with equal efficiency over the full range of steam pressure in the roll.

A strainer "B" collects any foreign matter that might interfere with the working of the trap. The Sight Class "C" allows the condensate flow from the trap to be seen at all times and is necessary when making the initial setting of the steam lock release valve.

Air and other gases are dealt with separately by the thermostatic air vent "D" mounted on the air collector pipe "E" in which air and condensate can separate.

In this system all air and gas is discharged from rolls directly to atmosphere instead of being passed on to other rolls. Rolls running at below atmospheric pressure release air to the vacuum condensate line.

Figure 10 shows the float trap in section. Condensate release is controlled by the float operated valve "A". The thermostatic vent "B" prevents air binding of the trap.

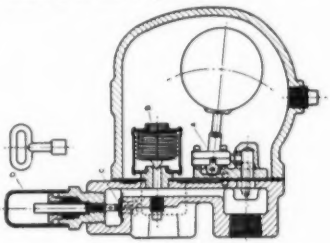


Figure 10. Float trap with steam lock valve.

The steam lock release valve is seen at "C." It connects the body of the trap with the discharge and can be sealed by the cover "D".

Steam lock release valves are set when the machine is first run after installing the system. This is done by watching the condensate flow in the sight glass. When flow stops due to steam locking, the valve is opened slightly. This process is continued until the trap gives a continuous flow of condensate. The valve is then sealed.

The steam lock release allows the steam, locked in the trap, joint and syphon, to by-pass the main valve of the trap and completely eliminates the intermittent water logging described earlier. It has been suggested that this by-pass valve is wasteful of steam. It should be borne in mind that any steam that enters the syphon pipe in the roll cannot then do useful work in the roll but can retard production and can affect quality. It is this steam only that is by-passed—steam that is lost to the process in any case.

Figure 11 shows the air vent in section.

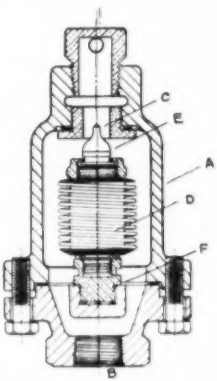


Figure 11. Air vent.

The body "A" has a bottom inlet "B" with the outlet at the valve seat

"C". Thermostatic element "D" is filled with a volatile fluid having a boiling point slightly lower than that of water. It carries a valve headd "E" and is fixed in the body at "F". The aid vent depends for its operation on the reduction in the temperature of a steam/air mixture by the presence of air.

The thermosensitive filling, when heated, builds up pressure in the element, which, due to the flexible wall tubing is free to expand.

When cold, the element is contracted, leaving the valve wide open for free access of air. Air free steam has a high enough temperature fully to expand the element and close the valve. Should air collect and mix with the steam, the lower temperature causes some of the filling to condense. The element then contracts and opens the valve, the air being discharged. The use of a volatile filling of correctly chosen properties makes the same air vent suitable for the full range of steam pressure used on the machine without adjustment.

Individual air venting in this way ensures complete removal of air from the machine instead of allowing it to mix with the steam and pass from section to section.

When used on rolls running at less than atmospheric pressure, air would flow into the roll when the air vent opened if the outlet were open to atmosphere. So under these conditions, the vent outlet is connected to the vacuum main to insure a positive pressure difference across the vent.

Air vents of a similar type can also be fitted on the roll end plate about 3" from the face to prevent air pocketing.

Individual Roll Operation

By treating each roll of a machine as a separate unit, surface temperature is controlled by the steam pressure on that roll alone. The pressure is, of course, regulated by the inlet valve and the temperature gradient, once set-up, can be maintained irrespective of changes from roll to roll. The overall temperature can be stepped up or down on the whole machine simply by operating the main control valve.

INSTALLATION: It will be seen in *Figure 9* how simple such a unit is to install. On existing machines the condensate pipe is removed and the draining and air ventnig unit fitted in its place with the Sight Glass outlet main.

FLASH STEAM RECOVERY: Individual roll drainage is most suitable for flash steam recovery in wet end rolls. Such a layout is seen in *Figure 12.*

Dry end and predryer rolls are fed with steam from "H.P." The condensate from the individual roll units passes to the separtor "H," flash steam being taken by pipe "F" to the wet end rolls fed by main "L.P." Any make up steam for the wet end rolls is supplied at a controlled pressure by the

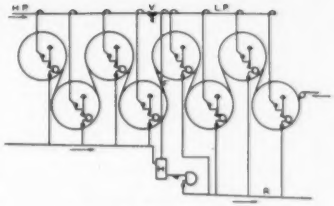


Figure 12. Flash steam recovery.

regulating valve "V".

Condensate from "H" is discharged by the trap into the return main "H" which can, of course, be connected to a vacuum pump if the wet end rolls are run at low pressure.

Cost & Maintenance

The initial cost of a drainage system cannot be considered alone but should take account of maintenance. First cost on small machines is lower than most of the systems at present in use and on long machines it compares favorably. The working parts of the system are the air vent and the float valve gear of the trap, and the trap air vent. As all these parts are designed for operation at up to 200 psi on chemical dryers, cylinders and other equipment, the conditions met with on paper machines are well within their working range. For steam containing corrosive gases, for example carbon dioxide, stainless steel parts can be used.

The strainer protects the working parts from erosion or mechanical damage and the Sight Glass gives a visual check on the working of the trap as well as the load on each roll. As for the cost of replacements, figures available on such parts supplied to more than 100 Mills using the System since 1939 show that the total cost has been under $1000—about 25c per roll over that period.

Maintaining correct surface temperatures on paper drying rolls is not, we know, the whole story of paper drying. Contact of the sheet with the roll, length of draw, felt condition and surrounding air temperature and humidity all have their separate effects. But correct surface temperature and particularly the ability to vary the temperature at will without introducing complications in the remainder of the machine eliminates one source of trouble for the Production Department.

Many production troubles, not the least-being low output, arise from treating the dryer part of the machine as one unit. The over-ail result is the mean of the efficient and the inefficient rolls. By individual roll control, the mean efficiency is stepped up and optimum results insured.

Patent Licenses

By

FRANK MAKARA
Member of N. Y. Bar

Patent Licenses agreements may be oral or written. Obviously a written license agreement is to be preferred since it supplies a record of the terms agreed upon, and can not be deviated from except by a subsequent agreement or in cases of judicial interpretation of ambiguities.

The written license agreement need not be recorded in the Patent Office but in certain cases it may be advisable to do so. Thus an exclusive license, which excludes even the licensor from practicing the invention, is substantially an assignment of the invention and it may be wise to record such agreements.

The license may be for the entire United States and its territories and possessions or for merely a designated area, as for example for an enumerated list of states.

The duration of the agreement is generally for the life of the patent, but it does not necessarily have to be so, since an agreement for 5 or 10 years duration is good.

A license from one of several owners in common of a patent is as good as if granted by all the owners with their express consent. Thus an owner of 5% of the undivided interest of a patent can validly license others to make, use and/or sell the claimed invention and pocket the entire amount of the license agreement for himself. To prevent such a practice the owners of the undivided patent interest should have a supplemental agreement as to the sale or licensing of the patent and a division of the proceeds thereof.

A licensee is generally stopped from contesting the validity of the patent, i.e. the subject matter of the agreement. However, where the licensor is guilty of anti-trust acts the licensee may contest the patent's validity. (Sola Electric Co. vs. Jefferson Electric Co. 317 U.S. 173). The contest of a patent's validity may be had even if there is an express agreement by the licensee not to contest the validity, in those cases where there is an illegal price-fixing clause, (American Optical Co. vs. N. J. Optical Co. 50 Fed. Sup. 806).

Since a patent's validity may be questioned at anytime during its 17 years life period, royalties are paid on the basis of a continuing presumption of validity in the patent. Hence, if the patent is declared invalid in a law-

suit, the royalty clause provides for immediate cessation of royalty payments. Of course, where for any reason, the royalty contract of an exclusive licensee is validly terminated then the property rights of the patentee or his assignees is automatically re-established in the patent.

Patent property rights are a peculiar breed of rights, in that they resemble real property rights, as for example in recording of sales in the Patent Office for purposes of constructive notice to the world at large as to the ownership of the patent rights. However, patent rights are also considered as personal property rights and this is so even though a transfer of the ribboned master patent is not necessary to a sale of patent rights. In this respect, patent rights are comparable to personal property rights of stocks and bonds and are so looked upon for taxation purposes.

The question of foreign patent rights often arises in a patent contract. The foreign rights need not belong to the exclusive licensee as the latter's rights are limited to the United States. To get foreign protection it is necessary to take out foreign patents on the invention in question. Who is to pay for these foreign patents. Often an exclusive licensee will agree to prosecute foreign applications if given an exclusive license in the invention, as well as to the United States patent based upon the invention. In such cases, patents are taken out in England, France and a few other important countries and then usually only if the patent will monopolize an industry. Foreign patents are expensive to prosecute, requiring payment of a United States attorney as well as his associate in the foreign country. Furthermore many foreign countries have a graduated system of taxation on the issued patent, whereby taxes increase with the age of the patent. In some countries, for example in France, a patent may not even carry a presumption of validity and in such cases is truly an invitation for a lawsuit.

The patent license must provide for the contingency of insolvency or bankruptcy of the licensee, so that in the event either disaster occurs the property rights will reappear in the licensor. Since an exclusive patent license has been adjudged by a court to be substantially a sale of the patent, it is a wise practice to retain in the licensor some reversionary interest in the patent. This is often done by granting the license "for the life of the patent less one day," and also by granting the license "for the United States its territories and possessions except Samoa."

Non-exclusive licenses are less desirable from the manufacturer's viewpoint. Naturally the patentee in such cases receives a lower royalty rate, as he is generally not limited to the number of licenses he may grant. Also all manufacturers want the same rights as their competitors, so that a clause to the effect that no other licenses having more favorable terms will be granted unless these more favorable terms will also be available to the prior licensee. However, if the non-exclusive licenses are granted to non-related industries, then as between industries these "more favorable clause" terms do not apply, since as between such industries there is no competition. Thus a non-exclusive license on a ball bearing licensed to baby carriage manufacturers may be based on a different royalty rate then when licensed to locomotive manufacturers.

Licenses may be exclusive for a limited time, for example one year, and thereafter become non-exclusive. Similarly a license may be exclusive for an enumerated list of states for but a specified number of years.

The question of sub-licenses granted by the licensee must be provided for in the agreement. If sub-licenses are granted then the method of royalty payments by such sub-licensee must be discussed.

Coming to the question of royalties we approach a complex set of problems. Royalty payment is based upon the theory that the manufacturer and the patentee both share the future success of the exploitation of the patent. Thus total royalty is often based on volume of sales, which may be based on number of items, weight of material or volume of liquid sold.

In lieu of sales the royalty may be based on the amount manufactured. When royalty is based on the quantity manufactured it is to the licensor's advantage and consequently the royalty rate may be lower than if based on sales, since not all the items made are sold.

The royalty price agreement may be based on so many cents per item, or so many cents per dollar volume or upon a certain per cent of profit. Royalty rates based on per cent of profits appear to be most fair but are very difficult to manage and lead to numerous law-suits. This situation occurs because there are so many methods of hiding profits, as for example, by increased salaries, bonus payments, liberal expense accounting, etc. Consequently royalty payments based on profits are not common.

As for sales price, should the factory or retail price be used? Generally the factory price is used and usually the royalty rate is between 5 to 15 per cent of this price, where the factory price is about one-half that of the retail price.

Where there is a price-quantity agreement, the basis of payment is often on the collections made, rather then on net sales, since here the licensor shares part of the expense of items sold but not paid for. A decreasing rate of royalty as the number of items made is increased, is a common practice and encourages the manufacturer to make and sell more material. Thus a rate, for example, of 20 cents per item on the first 1,000 items, 19 cents for the next thousand, etc., is common. Royalty variations are so numerous and flexible that no standard forms are followed.

Care must be exercised in licensing a corporation having a subsidiary since often the corporation sells to its subsidiary at cost and the subsidiary then sells at profit. Obviously the royalty, if based on price, should be on the subsidiary's selling price. The question of basing the selling price on list price or net selling price must be settled, as well as the question of discounts, i.e. whether to include all discounts or trade discounts only. Along with payments of a royalty, arises the question of "minimum guarantee" payments. This is a necessary clause in a royalty contract, since the licensee may otherwise promise a handsome royalty on items to be made and then not produce any items at all. It is to force the licensee to make the patented item that there is this clause for payment of a minimum sum. Should this minimum guarantee not be paid, then a clause in the contract canceling the license, if the licensor so choses, should be invoked. Note that only the licensor has the option to consider the license terminated in the case of failure to make minimum payment. In case of payment of royalty, this minimum guarantee may be absorbed as part of the royalty payment.

Since a license contract may run for many years, allowing many opportunities for future disagreement, the licensor and licensee should thoroughly investigate each other before signing. The license also allows the licensor to examine the licensee's books to check royalties. Payments of royalty should be made on specified dates and are often made quarterly, although monthly payments are often advisable and may be considered better practice.

In an agreement, the licensor should assert his sole ownership of the patent or patents, the fact that he may own other similar patents, that the license is for the patent and for any future improvements that the licensor should make, etc. Obviously the licensee should look into the question of patent ownership for himself by ordering an Abstract of Title of the patent or patents involved from the Patent Office. Also an extensive search of the validity of the patent should be undertaken by the prospective licensee, with the aid of his patent attorney.

If it is decided to record the license agreement in the Patent Office it should be drawn up in two parts each dependent upon the other, with the confidential matter located in the part that is *not* filed in the Patent Office.

A license clause to the effect that the sale of the entire licensee's business will be a valid reason for assigning the license is usual practice. The non-assignability of a license must be carefully worded to prevent sharp practice on the licensee's part, who may at-

tempt to use his employees in the role of prohibited assignees.

There also is the question of who is to conduct and pay for a law suit in case of patent infringement. In exclusive licensees, it is generally the licensee who will defend the patent, this fact of course will adversely effect the licensor's royalty rate. If the licensor is to defend the suit his royalty rate should be higher as he can then set aside a sum to defend the patent. Agreements where both parties are to share the expense of a law suit are quit common.

Termination of the license agreement should *not* rest on breach of a clause therein, since it would then put it within the power of the licensee to end the agreement at will, i.e. by a willful breath. Rather termination should be at the licensor's option, on about 30 days notice, the notice period being sufficient to allow the manufacturer to dispose of his manufactured items. The licensee should protect himself against minimum guarantee payments in case of strikes, floods, acts of war, etc., which prevent him from manufacturing.

The licensee is usually required to mark the item manufactured with the license number, as required by law, and also he must agree not to sell any items without such a marking. Innumerable other considerations should be provided for. It must be obvious that a license agreement should not be hastily entered into. Full consideration should be given to such matters as a licensee's option to buy the patent at some future date, or his right to make improvements on the patented invention. Questions as to whether the licensor is to receive an assignment of such improvements, less a shop-right, or whether the inventor may be employed at a salary by the licensee, should be discussed before the flow of royalty payments or lack of such payments begins.

Lastly an arbitration clause is advisable as to future disputes. The method of selection of arbitrators, etc., must be decided upon and not left to future circumstances, after a quarrel arises.

And finally care must be taken that the agreement is properly signed and preferably attested by witnesses. A signing by "John Jones, President Acme Co." may *not* bind the Acme Co., as it may merely bind John Jones, who descriptively, is also President of the Acme Co. The corporate signature is best if signed as follows: The Acme Co. by John Jones, its President. Attest: James Doe, its secretary (Corporate Seal).

There should follow an acknowledgment of the signatures by a qualified notary.

Patent Abstracts

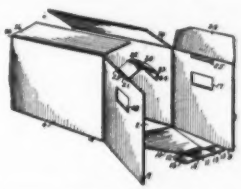
● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information to our readers are included herein.***

2,459,927—Process of manufacturing regenerated cellulose sheet material. Camille Dreyfus, New York, N.Y., Bjorn Andersen, Maplewood, N.J., and Nickolas N. Kojevnikoff, New York, N.Y., assignors to Celanese Corporation of America, a corporation of Delaware. Filed Dec. 20, 1944 — Issued Jan. 25, 1949.

Process for the production of regenerated cellulose sheet material, which comprises subjecting a solvent-cast, substantially dry, non-fibrous sheet material having a basis of cellulose acetate to the action of an aqueous solution of acetone containing about 25% by weight of acetone for about 2 minutes at room temperature to effect a swelling of said sheet material, subjecting the swollen cellulose acetate sheet material to the saponifying action of an aqueous solution containing sodium acetate, sodium sulfate and 1 to 10% of sodium hydroxide by weight whereby there is obtained a regenerated cellulose sheet of improved and substantially uniform directional strength and elongation characteristics, and then treating the regenerated cellulose sheet material with an aqueous solution of a hygroscopic agent.

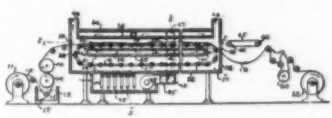
2,459,939—Container. Irving Hill and Justin D. Hill, Lawrence, Kans., assignors to The Lawrence Paper Company, Lawrence, Kans. Filed July 8, 1946—Issued Jan. 25, 1949.

A container including bottom and side wall, flaps on the ends of the bottom and side walls overlapping each other for forming ends walls for said container, said side wall flaps having registered hand hold openings and the outer of said side wall flaps having slots above the hand hold openings, locking means on said flaps of the bottom extending through said hand hold openings on the outer of the side wall flaps and engaging between said side wall flaps, said side walls and the outer side will flaps having closure flaps for forming a cover for said container, and integral tongues having fold lines on the upper edges of the inner of said side wall flaps above the hand hold openings adapted to extend through the hand holds and engaging in the slots for locking the end flaps together.



2,460,042—Method of making cockle paper. Stephen B. Stafford, Oxford, Mass., assignor to Rice Barton Corporation, Worcester, Mass. Filed Jan. 13, 1945—Issued Jan. 25, 1949.

The method of making cockled paper comprising the steps of providing a wet strip of paper impregnated with water and a cockle stabilizing sizing, progressively feeding the paper strip forward into, through and out of a drying zone in a substantially horizontal and flat condition with the aid of traveling cross stocks there beneath moving longitudinally forward faster than the strip and which frictionally engage and slip relative to the under side of the paper strip, while supporting a part of the wet weight of the strip in a buoyant current of heated air projected upwardly between the sticks and against the under side of the strip and subjecting the strip to only that light surface frictional contact with the sticks and a longitudinal tension which is sufficient to move the partially floated paper horizontally without destroying the cockled effect, and evaporating the water and shrinking the paper and thus causing stabilization of the cockle by the sizing remaining therein.

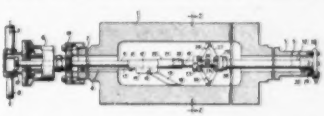


2,460,038—Emulsion Polymerization process. George E. Serniuk, Roselle, N.J., assignor to Standard Oil Development Company, a corporation of Delaware. Filed July 17, 1943—Issued Jan. 25, 1949.

The process of producing synthetic rubber-like polymerizates of good processability which comprises polymerizing in aqueous emulsion a mixture of a major proportion of a butadiene-1,3 hydrocarbon and a minor proportion of another unsaturated organic compound copolymerizable therewith in aqueous emulsion, using a water soluble soap emulsifier, from 0.001 to 1.0 weight percent of a hydrocarbon soluble peroxide, from 0.05 to 0.50 weight percent of an alkali persulfate, from 0.1 to 1.0 weight percent based on the reactants of a mercapto polymerization modifier having 8 to 18 carbon atoms per molecule, from 0.7 to 5.0 weight percent based on the water phase of a polyolefinic, higher fatty acid in the free state.

2,460,059 — Siphon apparatus for heated rolls. Hobart W. Bruker, Bordentown, N.J., assignor to George W. Swift, Jr. Inc., Bordentown, N.J. Filed Sept. 11, 1946—Issued Jan. 25, 1949.

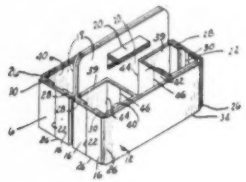
Siphon apparatus for heated rolls, including an exhaust conduit member positioned centrally within the roll and extending out through one end of the roll, said conduit member having a bearing portion located in the midsection of the roll, said midsection having an internal bore of enlarged size as compared to the bore of the end sections of the roll, a supporting structure located in said midsection and having rotary bearing means engaging said bearing portion, said supporting structure also having outwardly extending arms engageable with the inner wall of the roll to hold



the supporting structure in position, means being provided to afford movement of said arms from their aforesaid wall engaging positions into positions near the axial zone of the roll.

2,460,108—Collapsible carrier. Richard E. Smith, Rydall, Pa., and Paul A. Musso, Riverton, N.J., assignors to C. Schmidt & Sons, Inc., Philadelphia, Pa., a corporation of Pennsylvania, and Kieckhefer Container Company, Camden, N.J., a corporation of Delaware. Filed August 31, 1946 — Issued Jan. 25, 1949.

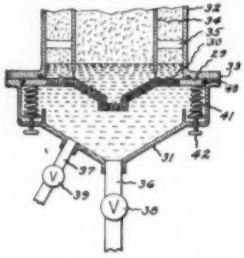
A single blank for forming a collapsible carrier, said blank being scored to form a first portion



adapted to form a first side wall of the finished carrier, a second portion adapted to form a second side wall of said carrier, and a third portion intermediate of, and hinged to, said side walls and adapted to constitute a bottom wall for said carrier, said side walls being also scored along lines normal to their hinged connection with said bottom wall to form opposite marginal tabs which are movable to a first position in which they are substantially normal to the plane of said side and bottom walls and to a second position in which they lie in the plane of said side walls, end wall portions extending from opposite ends of said bottom wall and hinged thereto along scores which are continuations, respectively, of the scores hinging said marginal tabs to said side walls, said end walls being movable to a first position in which they constitute extensions of said bottom wall and lie in the plane of said bottom and side walls, and to a second position in which they are substantially normal to said side and bottom walls, means for securing said end walls to said marginal tabs, said end and bottom walls being provided with a central score which is parallel to the scores between said side walls and said bottom wall, and the portions of said bottom wall adjacent said end walls being scored along inwardly converging lines which end at their intersection with said central score, and a pair of U-shaped members each having the limbs thereof secured, respectively, to said first and second side walls, with the bight portions of said U-shaped members being disposed inwardly of the edges of said first and second side walls and being scored so as to be foldable flat against, or between said first and second side walls, the marginal portions of the limbs of each of said U-shaped members being deflected toward each other and being secured, respectively, to the adjacent portions of said end walls.

2,460,129—Apparatus for manufacture of fibrous articles. Paul E. Ista, Paris, France, assignor to General Electric Company, a corporation of New York. Filed August 10, 1946 — Issued Jan. 26, 1949.

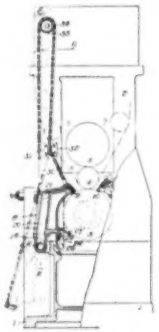
A device for making a fibrous article comprising a foraminous form, chambers situated above said form for holding and supplying fibers to different portions of said form, said portions being defined by the lower edges of the walls of said chamber, means situated below said form for maintaining a zone of reduced pressure at the lower side thereof and pressure sensitive means for separating said form and said edges, said separating means comprising a pressure-



responsive resilient spring mount for said form which is reactive to changes in pressure below said form.

2,460,184—Ink fountain for intaglio printing presses. Joseph E. Meyer, Westerly, R.I., assignor to C. B. Cottrell & Sons Company, Westerly, R.I., a corporation of Delaware. Filed Feb. 1, 1945—Issued Jan. 26, 1949.

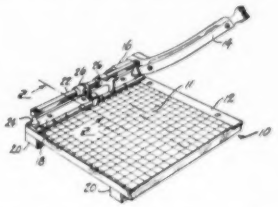
In an enclosed ink fountain for rotary intaglio printing presses, a hollow base, side uprights carried thereby, a rotary printing cylinder, a hori-



zontally disposed ink supply pipe mounted on the base, an inker head pivoted on said pipe to be swung between a raised substantially vertical inking position and a lowered substantially vertical non-inking position, and manually operated power increasing means for swinging the inker head between said inking and non-inking positions, including a cross shaft mounted in said side uprights above the inker head, pulleys on said cross shaft adjacent said side uprights, side chains leading upwardly from the top of the inker head to and around said pulleys and guides on said side uprights through which the side chains pass to ensure the positive movement of the inker head past its vertical dead center as the inker head is swung away from its inking position.

2,460,205—Trimming board. Robert A. Webster, Santa Monica, Calif. Filed Feb. 1, 1945—Issued Jan. 26, 1949.

In combination with a trimming board having a planar, imperforate bed plate provided with means along one edge for shearing a thin sheet of material; guide means extending along another edge of said bed plate for substantially the entire length of said edge for aligning a thin sheet of material; a support member mounted adjacent and parallel to said guide means and extending along substantially the entire length of said last mentioned edge; and a pair of stop means slidably mounted on said support member for longitudinal movement along substantially its entire length parallel to said guide means and to-



ward and away from said shearing means, said stop means further being mounted for substantially vertical movement to positions spaced above and in contact with the surface of said bed plate.

2,460,300—Polymeric Products Derived from Diolefins and Vinyl Aromatic Compounds and Method of Making Same. Walter J. Le Fevre and Kenneth G. Harding, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware. Filed June 29, 1944—Issued Feb. 1, 1949.

A vulcanizable polymeric material composed of a monovinyl aromatic compound of the benzene series having the vinyl radical attached to a carbon atom of the benzene nucleus, and a conjugated aliphatic diolefine, each in chemically combined form, the diolefine being in amount corresponding to between 37.5 and 94.5 mole per cent of the total amount of the diolefine and vinyl aromatic compound of which said product is composed, the polymeric product being one which is prepared by alternately emulsifying with water and polymerizing the monovinyl aromatic compound and the conjugated aliphatic diolefine, the compound last to be polymerized being added to the aqueous colloidal solution of the polymer formed in the preceding polymerization reaction, and in one such polymerization reaction the diolefine in amount corresponding to at least 37.5 mole per cent of the polymerizable starting materials being polymerized in the absence of the monomeric vinyl aromatic compound and in the presence of hydrogen peroxide in amount corresponding to between 0.2 and 5 per cent of the weight of the diolefine, a ferric salt of an inorganic acid in amount such as to contain between 1 and 500 parts by weight of iron per million parts of the diolefine, and an inorganic acid in amount sufficient to give the emulsion a pH value between 1.5 and 3.

2,460,282—Regenerated Cellulose Dielectric Material and Process of Producing the Same. Guy B. Gardner, Fairhaven, Mass., assignor, by mesne assignments, to Aerovox Corporation, New Bedford, Mass. Filed July 22, 1941—Issued Feb. 1, 1949.

The process of treating commercial "Cellophane" sheets that are substantially free of waterproof coating and of air voids and contain residues of acid bath, alkaline solvent and glycerol softener to convert the same into a dielectric for electrostatic condensers, which consists in passing the same successively through a bath of mono-hydric alcohol miscible with water, through a series of distilled water baths and finally through a second bath of mono-hydric alcohol miscible with water and then drying the sheet, with resultant substantial elimination of the residues of the acid bath, alkaline solvent, and the glycerol softener otherwise present in the "Cellophane."

PRICES . . . . . .

The prices below reflect general market quotations applying to those standard grades in which the normal volume of business is being done.

NEW YORK

Delivered New York

Standard News, per ton—

Rolls, contract	$100.00/	—
Sheets	115.00/	—

F.o.b. Mill, Varying Freight Allowances

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls	$6.25/	$6.75
No. 1 Wrapping Rolls	7.00/	7.50
Standard Bag	5.75/	6.25

Tissues— per ream 24x36 (480) 10/11 lbs. 2500 lbs. or more

Wh. No. 1 Frd.	$160.00/	—
Wh. No. 1 M. G.	150.00/	—
Wh. No. 1½	150.00/	—
Wh. No. 2	1.17½/	1.20
Kraft Anti-Tar	1.45 /	1.50
Shrd. Wh. No. 1 per lb.	.11½/	—

Toilet— per case of 100 rolls—1 M sheets.

Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.95/	—
Bleached 4½x5	8.80/	—
Per Case of 50 rolls—2000 sheets		
Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.80/	—
Per Case of 100 rolls—1000 sheets		
Facial, 4½ x 5, 2 ply	$8.95/	$9.45

Paper Towels—per case of 3750—Zone 1.

Wh. Jr. M'tif'd 9¼x9½	$5.25	
Br. Sr. M'tif'd 10x12	3.60	
Br. Jr. M'tif'd 9½x9¾	3.10	
Br. Jr. Sgl. fold 10x10¾	3.15	
Blchd. 7½ x 11, 24/25 rolls	$3.95/	$6.25

Manila, per cwt.

No. 1 Jute Tag 40 lb., sheets*	$15.05/	$17.50
Reg. Jute M.F. Manila, sheets*	13.50/	15.50
Wrapping Manila	8.75/	10.50
Printing Manila	10.00/	11.00

* Less usual allowance for rolls.

Boards, per ton—

Filled News	$65.00/	—
Plain Chip	65.00/	—
Blchd. Mla. L-d. Chip*	92.50/	—
White Pat. coated*	110.00/	
Kraft Liners 42 lb.	100.00/	
Kraft Corr. .009	105.00/	
Binders Boards	110.00/	116.00

* Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following prices are representative of distributors' resale prices, all deliveries in *Zone 1*:

Rag Content Bonds and Ledgers—
White, 20 lb.

Bonds

	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$51.40/$53.90
100% Rag	44.55/ 46.15
75% Rag	33.90/ 35.40
50% Rag	28.10/ 29.55
25% Rag	24.85/ 26.80

Ledgers

	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$52.65/$54.55
100% Rag	45.65/ 46.40
75% Rag	35.15/ 36.10
50% Rag	29.40/ 30.05
25% Rag	26.15/ 26.80

Sulphite Bonds and Ledgers
White, 20 lb.

Bonds

	4 Ctns.
	per cwt.
No. 1	$17.50/ —
No. 2	16.65/ 16.75
No. 4	15.60/ 15.95

Ledgers

	4 Ctns.
	per cwt.
No. 1	$18.80/ —
No. 2	18.05/ —

White Book

	Conversion Coated	Case
		per cwt.
No. 1		$20.75/$20.90
No. 2		19.50/ 19.65
No. 3		18.15/ 18.90
	Machine Coated	
No. 1		16.40/ 16.65
No. 2		14.90/ 15.15
	Uncoated	
No. 1 Antique (Watermarked)		16.40/ 17.90
Offset		15.15/ 16.65
A Grade E. F.		15.40/ —
A Grade S. C.		15.90/ 16.15
B Grade E. F.		14.90/ 15.15
B Grade S. C.		15.40/ 15.65

WORLD WOOD PULP MARKETS

Third Quarter Contract Prices, Per Short Air-Dry Ton

	Delivered, with varying freight allowances		On dock Atlantic Ports Full freight allowance		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$65.00/ —	$65.00/ —			
Soda, Bleached	113.00/ —	113.00/ —		Competitive	
Sulphate, Bleached	118.00/126.00	126.50/ —	125.00/128.00		
Sulphate, Unbl'd North'n	— / —	82.50/105.00	94.00/ —	with	
Sulphate, Unbl'd South'n	80.00/ —				
Sulphite Blchd. (S'ftw'd)	118.00/ —	118.00/ —	118.00/ —	Domestic	Competitive
Sulphite, Blchd. (H'dw'd)	113.00/ —				
Sulphite, Unbleached	100.00/ —	100.00/ —	100.00/ —	Grades	
Sulphite, Unbl'd (Glassine)	105.00/ —	105.00/ —	104.00/105.00		

Twines
All Prices Nominal, F.o.b. Mill

(Soft Fiber)		
Coarse Polished—India	.35½/	.36½
Fine Polished India	.41½/	.45
Unpolished—Paper Makers	.32¼/	.34½
Tube Rope	.33¾/	.35½
Wrapping	.36 /	.38¼
Cotton	.58 /	.60
Polished Cotton	.55 /	—
(Hard Fiber)		
Mex. Sisal	.21 /	.27
(American Hemp)		
Polished Hemp	.45 /	.48
Unpolished	.35 /	.37½

WASTE PAPER MARKET

Prices to Mills. Quotations Nominal
F.O.B. Shipping Point (Per Ton)

	New York July 11	Philadelphia June 6	Boston June 11	Chicago July 7
No. 1 Mixed Paper	$2.00/ $3.00	$3.00/ $4.00	Nominal	$5.00/ —
Boxboard Cuts	2.00/ 3.00	2.00/ 3.00	— / 5.00	8.00/ —
Mill Wrappers	14.00/ 15.00	8.00/ 10.00	— / 9.00	7.00/ —
No. 1 News	7.00/ 8.00	5.00/ 7.00	— / 9.00	11.00/ —
Over-issue News	15.00/ 16.00	9.00/ 11.00	8.00/ 10.50	14.00/ —
Corrugated Containers	9.00/ 11.00	10.00/ 11.00	8.00/ 10.50	12.00/ —
New Corrugated Cuts	13.00/ 15.00	18.00/ 20.00	16.00/ —	15.00/ —
Double Kraft Ld. Corr. Cuts	30.00/ —	25.00/ 30.00	25.00/ —	25.00/ 30.00
Used Kraft Bags	25.00/ —	15.00/ 17.00	25.00/ 30.00	15.00/ —
No. 1 Brown Kraft Paper	25.00/ —	21.00/ —	25.00/ —	15.00/ —
Super Resorted Br. Kraft	25.00/ 30.00	30.00/ —	40.00/ —	30.00/ —
New Br. Kraft Env. Cuts	55.00/ 60.00	60.00/ 65.00	60.00/ 65.00	50.00/ —
New Br. Kraft Cuts	40.00/ 45.00	55.00/ —	45.00/ —	45.00/ —
No. 1 Gdwd. Shvs.	15.00/ 20.00	12.00/ 15.00	25.00/ —	16.00/ —
White Newsblanks	45.00/ 50.00	30.00/ —	— / 50.00	30.00/ —
No. 1 Flyleaf Shvs.	25.00/ 30.00	15.00/ 17.00	35.00/ 40.00	30.00/ —
No. 1 Soft Wht. Shvs.	65.00/ 70.00	55.00/ 60.00	70.00/ 80.00	55.00/ —
Super Soft Wht. Shvs.	85.00/ 90.00	60.00/ 65.00	80.00/100.00	65.00/ —
Hd. Wht. Shvs.	80.00/ 90.00	70.00/ 75.00	80.00/ —	80.00/ —
Hd. Wht. Env. Cuts.	95.00/100.00	90.00/ 95.00	90.00/105.00	90.00/ —
New Manila Env. Cuts.	60.00/ 70.00	60.00/ —	60.00/ 70.00	55.00/ —
Col. Tab Cards	25.00/ 30.00	20.00/ 25.00	— / —	30.00/ —
Manila Tab Cards	60.00/ 65.00	60.00/ 65.00	65.00/ 75.00	50.00/ —
No. 1 Mixed Ledger	27.50/ 30.00	20.00/ 25.00	37.50/ —	30.00/ —
White Ledger	35.00/ 40.00	30.00/ 35.00	45.00/ 50.00	40.00/ —
Mixed Books & Mags.	7.00/ 8.00	4.00/ 5.00	12.00/ —	7.00/ —
No. 1 Rep'd Hvy. Books & Mags.	15.00/ 17.00	8.00/ 10.00	22.00/ 23.00	20.00/ —

Rag Market

New Domestic Cotton Cuttings
(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
White Shirt	$10.00/ $10.50
Unbleached Muslin	10.00/ 10.50
Light Silesias	7.00/ 7.50
White Back Blue Overalls	6.25/ 6.50
Blue Overalls	6.00/ 6.25
Fancy Shirt	4.50/ 5.00
Percales	5.50/ 6.00
Light Prints	5.50/ 6.00
No. 1 Washables	2.75/ 3.00
Bleachable Khaki	5.00/ 5.50
Unbleachable Khaki	4.50/ 5.00
Cottonades	4.25/ 4.75
Lt. Flannelettes	7.00/ 7.50
Men's Corduroy	3.50/ 4.00
Women's Corduroy	3.00/ 3.50

Old Domestic Cotton Rags
(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
No. 1 Whites, Repacked	$4.25/ $4.75
No. 1 Whites, Miscellaneous	3.50/ 4.00
No. 2 Whites, Repacked	2.75/ 3.00

No. 2 Whites, Miscellaneous	2.00/	2.25
Cotton Pants & Overalls	2.50/	2.75
Thirds and Blues, Repacked	2.00/	2.25
No. 1 Roofing Rags	1.25/	1.35
No. 2 Roofing Rags	1.00/	1.20
No. 3 Jute Bagging	.95/	1.05
No. 4 Brussels & brd. Bck'd crpts.	.90/	1.00
Roofing Bagging	.80/	.95

New Foreign Cotton Cuttings
(Prices to Dealer, F.o.b. Dock, N. Y.)

	Per 100 lbs.
New Dark Cuttings	
New Mixed Cuttings	
Light Silesias	prices
Light Flannelettes	
New White Cuttings	are
New Unbleached Cuttings	
Fancy Shirt Cuttings	nominal
Light Prints	
Bleachable Khaki, No. 1	
Unbl. Khaki, No. 1	

Old Foreign Rags
(Prices to Dealer, F.o.b. Dock, N. Y.)

	Per 100 lbs.
No. 1 White Cottons	
No. 2 White Cottons	
No. 3 White Cottons	
No. 4 White Cottons	prices
Extra Light Prints	
Old Light Prints	
Med. Light Prints	are
Dutch Blue Cottons	
Checks and Blues	
Linsey Garments	nominal
Dark Cottons, European	
Dark Cottons, Egyptian	
Old Shopperies	
New Shopperies	

Bagging
(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.	
Foreign Gunny, No. 1	**$7.50/**	**$8.00**
Domestic Gunny, No. 1	7.50/	8.00
Heavy Wool Tares	6.50/	7.00
No. 1 Scrap Bagging	**4.75/**	**5.00**
Foreign Manila Rope	**5.50/**	**5.75**
Domestic Manila Rope	**5.50/**	**5.75**
Jute Strings	**6.25/**	**6.50**
No. 1 Sisal Strings	5.00/	5.25
Mixed Strings	**1.15/**	**1.30**

PHILADELPHIA

Domestic Rags (new)
(F.o.b. Eastern Shipping Point)

	Per 100 lbs.	
White Shirt	**$10.25/**	**$10.50**
Fancy Shirts	5.00/	5.25
Light Silesias	**6.75/**	**7.00**
Unbleached Muslin	**10.00/**	**10.25**
Light Prints	**5.25/**	**5.50**
Washable No. 1	2.75/	3.25
Blue Overall	**6.00/**	**6.25**
Percales	**5.50/**	**5.75**
Unbleachable Khaki	3.50/	4.00
Bleachable Khaki	4.50/	5.00
Men's Corduroy	3.75/	4.25
Ladies' Corduroy	3.25/	3.75
Cottonades	3.75/	4.00

Domestic Rags (old)
(F.o.b. Eastern Shipping Point)

	Per 100 lbs.	
Mixed White	$3.00/	3.25
Thirds and Blues Repacked	2.25/	2.50
Cotton Pants & Overalls	2.75/	3.00
No. 1 Roofing Stock	1.00/	1.10
No. 2 Roofing Stock	.90/	1.00
Roofing Bagging	.80/	.90

Bagging
(F.o.b. Eastern Shipping Point)

	Per 100 lbs.	
Old Manila Rope	$5.50/	—
Foreign Gunny No. 1	**8.00/**	**—**
Domestic Gunny No. 1	**8.00/**	**—**
Sisal Strings No. 1	3.50/	—
No. 1 Scrap	4.50/	5.00
No. 1 Jute Rope	6.00/	—

BOSTON

Bagging
(F.o.b. Boston)

	Per 100 lbs.	
Foreign Gunny	8.00 /	8.50
Domestic Gunny	8.00 /	8.50
Domestic No. 1 Old Rope	6.00 /	6.25
Foreign No. 1 Old Rope	**6.50 /**	**—**
Mixed Strings	1.55 /	—
Transmission Rope—Domestic	**3.00 /**	**3.50**
Jute Carpet Threads	**— /**	**4.00**
Bleachery Burlap	**— /**	**9.00**
Scrap Burlap—		
Foreign	— /	5.75
Domestic	— /	5.75
South America	6.00 /	6.50
Austr. Wool Pouches	**8.25 /**	**—**
New Zealand Wool Pouches	**— /**	**6.00**
New Burlap Cuttings	**8.50 /**	**—**
Heavy Baling Bagging	7.50 /	8.00
Paper Mill Bagging	— /	5.00

Domestic Rags (new)
(F.o.b. Boston)

	Per 100 lbs.	
New Light Prints	5.75 /	6.00
Fancy Percales	6.00 /	6.25
White No. 1 Shirt	10.00 /	10.75
Light Flannelettes	**— /**	**7.00**
Canton Flannels, Bleached	**— /**	**9.00**
Underwear Cutters, Bleached	10.75 /	11.25
Underwear Cutters, Unbleached	10.00 /	10.25
Blue Overalls	5.75 /	6.25
Soft Unbleached	9.75 /	10.50
Blue Cheviots	5.75 /	6.25
Fancy Shirt	4.00 /	4.50
Washable	3.25 /	3.50
Khaki Cuttings	5.00 /	5.25
Men's Corduroy	4.50 /	—
Khaki Canvas	— /	5.50
B. V. D. Cuttings	10.00 /	10.25

Domestic Rags (old)
(F.o.b. Boston)

	Per 100 lbs.	
No. 1 Whites, Repacked	3.00 /	3.50
No. 1 Whites, Miscellaneous	2.50 /	3.00
Twos and Blues, Repacked	— /	2.00
Cotton Pants & Overalls	2.50 /	2.75
No. 1 Roofing Stock	1.00 /	1.10
No. 2 Roofing Stock	.90 /	.95
Roofing Bagging	— /	.70

MARKETS

Blanc Fixe

Prices firm. Demand moderate. Supply adequate. Currently quoted at $85.00 in bags, car lots, at works, 6 cents per pound, l.c.l., deld. By-product supply somewhat restricted. Quoted at $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder

Prices steady. Demand easy. Prices range from $4.25 to $4.75 per 100 pound drums, l.c.l., works.

Casein

Domestic price rises 1c as production is cutback. Market dullness pronounced. Argentine price firm. Current prices on processed acid precipitated casein at 19 to 21 cents per pound for domestic grades and 19½ to 20 cents for imported grades, f.o.b. shipping point, car lots.

Caustic Soda

Prices firm. Supplies available for prompt shipment. L.c.l. sales reported at competitive levels. Solid caustic is reported at $3.05 per cwt. flaked and ground is quoted at $3.45 per cwt., in 400 pound drums, $3.95 per cwt. in 100 pound drums—car lots at works; liquid 50 percent in tank cars at $2.40 per cwt.; liquid 73 per cent in tank cars at $2.50 per cwt., at works.

China Clay

Prices firm. Demand easier, supply of domestic and imported ample. Domestic filler quoted at $10 to $12.50 per ton, car lots, f.o.b. mines. Coating clay is $15 to $25. Imported clay quotation, short tons, $16 to $35, export warehouse.

Chlorine

Supply condition tightened by seasonal water requirements. Prices firm. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt, in multi-tank cars, f.o.b., works.

Rosin

More rosin going under loan. No offerings on open market. Heavy ECA export business is developing. Gum rosin in drums per 100 pounds net in car lots, f.o.b. Savannah, B, $5.75; G, H, I, K, $6.53; Savannah; B, $4.25; FF, $5.50.

Rosin Size

Supply good. Demand steady. Seventy percent gum and pale wood grades, tank cars, $5.45 to $5.55 f.o.b. southern shipping point.

Salt Cake

Prices cut $2.00 a ton. Demand fair. Domestic quoted at $22.00/$24.00, f.o.b. shipping point, freight allowed to destination.

Soda Ash

In free supply. Demand easier. Prices firm. Current prices, car lots per 100 pounds; in bulk, $1.15; in paper bags, $1.40; and in barrels, $1.90.

Starch, Corn

Market unchanged. Demand fair. Supply ample. Pearl grade currently quoted at $4.82 per 100 pound; powdered starch at $4.93 per 100 pounds; car lots, f.o.b. Chicago.

Starch, Potato

Market unchanged. Moderate paper demand. Idaho quantities limited to warehouse. High grade quoted at $7.00 cwt., l.c.l., ex N. Y. whse. Supply tight. Ample Maine supply quoted $4.75, f.o.b. Maine warehouse; pearl grade, $4.60 cwt. f.o.b. Maine.

Sulphate of Alumina

Prices firm Supply good. Demand steady. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.50 per 100 pounds in bags, car lots, at works.

Sulphur

Prices firm. Demand sustained at good level. Supply good. Annual contracts are quoted at $18 per long ton, f.o.b. mines; $19.50, f.o.b. vessels, Gulf ports. Export price f.o.b. Gulf ports is $22.00 per long ton.

Talc

Prices steady. Demand continues ahead of supply. Domestic grades are currently quoted at $23 per ton in paper sacks, f.o.b. mills; Canadian at $35 and up per ton. All prices in car lots.

Tapioca Flour

New supplies begin to arrive. Superior high range from $9.85 to $11.00 cwt.; high grades $8.60/$9.50 cwt., on dock Atlantic and Gulf ports; medium grades range from $8.25/— cwt. on dock, N. Y.

Titanium Dioxide

Prices firm. Supply reported now in balance with eased demand. Anastase 19½c pound carload lots, 20c l.c.l., rutile, 21½c pound carload lots, 22½c l.c.l.; 50-pound bags, f.o.b. plant, actual freight allowed.

IMPORTS

IMPORTS AT NEW YORK
Week Ending July 16

Newsprint

R. A. Olsen Inc., Newscarrier, Donnacona, 359 rolls.
H. G. Craig Co., G.D.D., Donnacona, 355 rolls.
R. A. Olsen Inc., Donpaco, Donnacona, 351 rolls.
R. A. Olsen Inc., Kermic, Donnacona, 360 rolls.
R. A. Olsen Inc., A.C.D., Donnacona, 338 rolls.
H. G. Craig Co., Newscarrier, Donnacona, 326 rolls.
R. A. Olsen Inc., G.T.D., Donnacona, 356 rolls.

Writing Paper

Rohner Gehrig & Co., America, Havre, 1 cs.

Tracing Cloth

Keuffel & Esser Co., American Veteran, Manchester, 25 cs. (bleached cotton).

Printing Paper

Oxford University Press, Britannaic, Liverpool, 11 cs.

Paper Serviettes

(———), Britannaic, Liverpool, 10 crates.

Wallpaper

Hudson Shipping Co., American Reporter, Havre, 10 pkgs.
Meadows Wye & Co., Queen Elizabeth, Southampton, 1 cs.

Photo Paper

J. J. Gavin Co., Queen Elizabeth, Southampton, 6 cs. (unsensitized).

Wallboard

Elof Hansson Inc., Stockholm, Gothenburg, 1 cs.

Rags, Baggings, etc.

National City Bank, Boheme, Alexandria, 78 bls. scrap bagging.
H. W. T. Mali, Reinholt, Shanghai, 100 bls. cotton waste.
J. J. Rozendaal, Knut Bakke, Antwerp, 142 bls. cotton waste.
Bankers Trust Co., Knut Bakke, Antwerp, 160 bls. jute waste.

Put more opportunity into your company's future

WITH THIS FIVE-STEP PROGRAM

Here's an easy-to-follow program that will substantially increase your company's chances for a prosperous future.

Nation-wide experience in 20,000 companies proves that this popular program also pays off handsomely *today*. It increases each participating employee's peace of mind—making him a more contented, more productive worker. It reduces absenteeism, lowers accident rates, increases output, and improves employee-employer relations!

This program is simply a proved formula for building membership in the Payroll Savings Plan—the "automatic" system by which millions of workers are investing in U. S. Savings Bonds every pay-day.

What Are the Five Steps?

The benefits of the Payroll Savings Plan to your company are in proportion to the percentage of employees who participate. Nation-wide experience indicates that 50% of your employees can be persuaded to join *without high-pressure selling*. Here are five steps which have proved to be the "magic formula" for putting over the Plan. They will get results for you:

1. See that a top management man sponsors the Plan.

2. Secure the help of the employee organizations in promoting it.

3. Adequately use posters and leaflets and run stories and editorials in company publications to inform employees of the Plan's benefits to them.

4. Make a person-to-person canvass, once a year, to sign up participants.

These first four steps should win you 40-60% participation. Normal employee turnover necessitates one more step:

5. Urge each new employee, at the time he is hired, to sign up.

Check up on the Payroll Savings Plan in your company. If fewer than half of your employees are participating, you have a lot to gain by following the five-step program outlined here. All the help you need is available from your State Director, U. S. Treasury Department, Savings Bond Division. While it's on your mind, why not call him right now? Or write the Treasury Department, Washington 25, D. C.

Are You With It?

In the current national Savings Bonds campaign, May 16-June 30, the Treasury Department asks each company operating the Payroll Savings Plan to canvass all employees, with the goal of having at least half of them signed up by the end of the month. This advertisement tells how you can achieve that goal most easily.

The Treasury Department acknowledges with appreciation the publication of this message by

PAPER TRADE JOURNAL

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council.

IMPORTS

(———), Knut Bakke, Antwerp, 110 bls. jute rags, 177 bls. jute waste.

E. J. Keller Co., Inc., Knut Bakke, Antwerp, 60 bls. paperstock, 123 bls. jute waste, 115 bls. old bagging.

J. Eisenberg & Son, Agwidale, Havana, 27 bls. cotton rags.

W. Barnet & Son, American Veteran, Manchester, 19 bls. wool rags, 20 bls. hosiery clips.

E. J. Keller Co., Inc., Flying Enterprise, Rotterdam, 133 bls. bagging.

Brandwein Mazur Co., Hoegh Silverstar, Bombay, 200 bls. cotton waste.

New England Waste Co., Hoegh Silverstar, Bombay, 200 bls. cotton waste.

Zalenko & Co., Hoegh Silverstar, Bombay, 100 bls. cotton waste.

E. J. Keller Co., Inc., Flying Trader, Karachi, 100 bls. jute rags.

Bankers Trust Co., Averdyk, Rotterdam, 42 bls. jute bagging.

A. de Vries Trading Corp., Averdyk, Rotterdam, 89 bls. scrap bagging.

Midwest Waste Material Co., Averdyk, Antwerp, 79 bls. scrap bagging, 55 bls. old stockings.

J. J. Rozendaal, American Reporter, Dunkirk, 94 bls. cotton waste.

1st National Bank of Boston, Dimitri Donskoy, Poti, 85 bls. cotton linters.

1st National Bank of Chicago, Dimitri Donskoy, Poti, 7317 bls. cotton linters.

Old Rope

National City Bank, Jalakirti, Calcutta, 190 bls. old hemp rope cuttings.

China Clay

English China Clays Sales Corp., Boston City, Avonmouth, 420 bags, 15 tons.

Woodpulp

Cellulose Sales Co., Bernhard Ingelsson, Sundsvall, 1050 bls. dry sulphite pulp, 2550 bls. kraft sulphate pulp.

Pagel Horton & Co., Inc., Stockholm, Gothenburg, 1 cs. woodpulp (samples).

IMPORTS AT NEWARK

Week Ending July 16

Pagel Horton & Co., Inc., Bernhard Ingelsson, Sweden, 1000 bls. dry sulphite pulp.

Bulkley Dunton Co., Bernhard Ingelsson, Sweden, 508 bls. dry sulphite pulp.

Stora Kopparberg Corp., Bernhard Ingelsson, Skutskar, 538 bls. dry woodpulp.

Perkins Goodwin & Co., Bernhard Ingelsson, Norrsundet, 1500 bls. dry sulphate pulp.

Bulkley Dunton Co., Bernhard Ingelsson, Stugsund, 500 bls. prime bleached sulphate pulp.

Cellulose Sales Co., Bernhard Ingelsson, Stugsund, 490 bls. air dry sulphite pulp.

IMPORTS AT ALBANY

Week Ending July 16

Pagel Horton & Co., Inc., Bernhard Ingelsson, Sweden, 3500 bls. dry woodpulp.

Bulkley Dunton Co., Bernhard Ingelsson, Sweden, 1270 bls. dry sulphite pulp.

Stora Kopparberg Corp., Bernhard Ingelsson, Skutskar, 538 bls. dry woodpulp.

Thomson Paper Mills, Bernhard Ingelsson, Noorsundet, 387 bls. dry sulphite pulp.

IMPORTS AT NORFOLK

Week Ending July 16

F. P. Gaskell & Co., American Forwarder, Glasgow, 107 cs. coated paper (for cigarette tipping).

Castle & Overton, Inc., Hoegh Silverstar, Bombay, 266 bls. old jute rags.

New England Waste Co., Hoegh Silverstar, Bombay, 100 bls. old bagging.

E. J. Keller Co., Inc., Flying Trader, Bombay, 100 bls. jute rags, 84 bls. rags.

FINANCIAL RECORD

PREFERRED STOCKS	Per Share Earnings: Calendar Year 1948	Per Share Earnings: 12 Mo. to Approx. 3/31/49	Indic. Annual Divid. Rate	July 19 Approx. Market Price
Armstrong Cork Co. $3.75 Cum.	**$46.33***	**$46.33***	**$3.75**	98⅛
Armstrong Cork Co. $4.00 Cum. Conv.	**46.33***	**46.33***	**4.00**	108½
Celotex Corp. 5% Cum.	26.42c	15.31i	1.00	15¾
Champion Paper & Fibre $4.50 Cum.	61.80j	99.97f	4.50	94⅛
Container Corp. of Amer. 4% Cum.	**105.41**	**104.24**	**4.00**	95½
Crown Zellerbach $4.20 Cum.	59.10e	61.84i	4.20	97½
Crown Zellerbach $4.00 Cum. Conv. 2nd	55.88e[c]	58.59i[c]	4.00	94
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	**10.10**	**11.71**	**2.50**	46⅞
Flintkote Co. $4 Cum.	**83.25**	**74.66**	**4.00**	99⅝
Robert Gair Co., Inc. 6% Cum.	**17.08**	**15.96**	**1.20**	15⅝
International Paper Co. $4 Cum.	**263.00**	**265.18**	**4.00**	96
Johns-Manville $3.50 Cum.	**209.89**	**217.72**	**3.50**	107½
Kimberly Clark Corp. 4½% Cum.	**80.74**	**77.94**	**4.50**	102¾
Kimberly Clark Corp. 4% Cum. Conv. 2nd	**41.59***	**46.40**	**4.00**	96
MacAndrews & Forbes 6% Cum.	**62.23**	**62.60**	**6.00**	132½
Mead Corp. 4¼% Cum.	73.46	68.78k	4.25	73¾
Mead Corp. 4% Cum. Conv. 2nd	29.91*	24.30k*	2.00	31½
Paraffine Cos. Inc. 4% Cum. Conv.	**156.11**	**158.51**	**4.00**	103
Rayonier Inc. $2 Cum.	**16.43**	**15.72**	**2.00**	29½
St. Regis Paper Co. 4.40% 1st A	**79.90**	**68.10**	**4.40**	77¾
Scott Paper Co. $3.40 Cum.	**59.06**	**66.09**	**3.40**	93¾
U. S. Gypsum Co. 7% Cum.	**314.45**	**314.18**	**7.00**	177½
United Wallpaper Inc. 4% Cum. Conv.	**(d)0.79**	**15.44**	**2.00**	23½
West Virginia Pulp & Paper 4½% Cum.	79.45c	77.54i	4.50	106
COMMON STOCKS				
APW Products Co.	**$0.73**	**$0.22**	**$0.25**	2¾
American Writing Paper Corp.	**(d)0.15**	**(d)0.15**	**0.25**	5⅜
Armstrong Cork Co.	**7.54**	**n.a.**	**3.00**	42½
Celotex Corp.	7.21c	4.06i	1.00	16⅛
Certain-Teed Prods. Corp.	**4.02**	**3.57**	**1.00**	11¾
Champion Paper & Fibre	5.34j	8.70f	2.00	22⅛
Congoleum Nairn Co.	**5.78**	**n.a.**	**2.25**	26⅞
Container Corp. of America	**10.12**	**9.98**	**4.50**	32⅞
Crown Zellerbach	6.70c	6.85i	2.00	24⅞
Dixie Cup Co.	**6.70**	**8.11**	**1.00**	26½
Eastern Corp.	4.76	3.10	(h)	8⅛
Flintkote Co.	**5.86**	**5.13**	**2.50**	25¾
Robert Gair Co., Inc.	**2.67**	**2.48**	**0.70**	5⅜
Great Northern Paper Co.	**4.63**	**5.12**	**2.80**	36⅝
International Paper Co.	**16.73**	**16.87**	**5.00**	48¼
Johns-Manville Corp.	**5.22**	**5.42**	**2.00**	38⅛
Kimberly Clark Corp.	**5.02**	**4.83**	**1.65**	19½
MacAndrews & Forbes Co.	**3.68**	**3.70**	**2.50**	32⅝
Marathon Corp.	**4.11c**	**3.76i**	**1.40**	20½
Mead Corp.	6.36	5.84k	1.00	12½
National Container Corp.	**2.28**	**1.80**	**0.40**	5½
Paraffine Cos. Inc.	**2.45**	**2.49**	**1.20**	17⅝
Rayonier, Inc.	**9.09**	**8.64**	**2.00**	25⅛
Ruberoid Co.	**11.80**	**9.87**	**3.25**	47¼
St. Regis Paper Co.	**2.71**	**2.27**	**0.80**	6⅞
Scott Paper Co.	**4.15**	**4.68**	**2.50**	55⅜
Sutherland Paper Co.	**6.02**	**5.24**	**2.50**	33
Union Bag & Paper Corp.	**9.17**	**8.21**	**3.50**	24½
United Board & Carton	2.04b	(d)0.35i	(e)	5¼
U. S. Gypsum Co.	**15.04**	**15.03**	**6.00**	98⅞
United Wallpaper	**(d)0.10**	**0.42**	**(n)**	3
West Virginia Pulp & Paper	**11.33c**	**10.93i**	**4.00**	39

(b) Year ended 11/23/48
(c) Year ended 10/31/48
(d) Deficit
(e) Omitted dividend 2/4/49
(f) 11 months to 3/31/49
(g) 12 months to approximately 1/31/49
(h) Directors took no action on August dividend—last payment 5/2/49
(i) 12 months to approximately 4/30/49
(j) 8 months to 12/31/48
(k) 12 months to approximately June 12
(n) Last payment 25c, 9/16/47
n.a. Not available

(*) Earnings per combined preferred shares.

Preferred Issue Sold

NEW YORK—Hemphill, Noyes & Co., has sold privately 50,000 shares of Combined Locks Paper Co., (Appleton, Wis.), 4½% cumulative $25 par value preferred stock.

Dividends Declared

National Container Corp. has declared a quarterly dividend of ten cents per share on its common stock, payable September 10, to holders of record August 15, and a quarterly dividend of 29.6875 cents per share on its $25 par value 4¾ percent cumulative convertible preferred stock, payable August 1, to holders of record July 21.

Mead Corp., on July 12 announced a reduction of its quarterly dividend rate to 25 cents from 50 cents.

API Import Committee Reports

Scandinavians Cut Paper Prices

NEW YORK — Press dispatches from Stockholm report an agreement by fifty paper manufacturers in Sweden, Finland and Norway to cut the prices of all papers, except newsprint, an average of 10 percent in order to facilitate exports to world markets. In addition, Finland has revalued its currency by depreciating the value of the Finnish mark.

In the case of Finland, the combined depreciation of the mark and the deduction in prices will more than nullify the existing U. S. duty rates of 25 percent on sulphate wrapping, 20 percent on sulphite wrapping, and 10 percent on paperboards. Before these recent steps to promote exports, Finland was selling kraft paper at 5 to 6 cents per pound, foreign value, or the equivalent of approximately 7½ cents per pound, foreign value, at American Atlantic coast ports. Sulphite wrapping paper was being sold at comparable prices.

Reciprocal Trade Agreement Developments

Because of the illness of Senator George, chairman of the Senate Finance Committee, the Senate has not yet taken up the extension of the Administration's program for further tariff reductions by reciprocal trade agreements. Meanwhile negotiations are continuing at Annecy, and latest reports are that 50 of the anticipated 160 agreements have been completed.

Although Senator George will sponsor the Administration program for the extension of the trade agreement program, his own state of Georgia is one whose mills will be seriously affected if pending negotiations are carried to completion. Among the grades on which the U. S. is considering duty rate reductions are kraft wrapping paper and kraft board with duty rates of 20 and 10 percent, respectively, may be cut in half by the negotiations now under way with Finland. Three of the most important mills making such products are located in Georgia in addition to a large pulp plant. A dozen or more such mills, all of which were built as part of the huge development of the paper industry in the southern pine regions, are located in Florida, Louisiana, Alabama, N. and S. Carolina and Virginia.

While the U. S. is campaigning for the increase of paper and paperboard imports by duty rate reductions, Great Britain and the other segments of the British Empire are taking the leadership in building a wall against imports from the United States. Benelux (the tri-partite Customs Union of Belgium, Netherlands and Luxembourg), however, has not joined with the other nations which have raised economic barriers against American products in order to conserve their dollar exchange.

Nine Inch Newsprint Rolls

As of June 30, the law permitting the duty free importation of newsprint in rolls nine inches in width expired, and the minimum width of rolls now allowed duty free entry as standard newsprint is 15 inches.

May Import Statistics

Tabulations of imports during May and for the first five months of 1949 show important comparisons with those of the similar periods of 1948. (See Table I and II.) Also the unit value of imports of major grades has decreased noticeably in 1949. For instance, machine glazed kraft wrapping paper imports were valued at 5 cents per pound in May as compared with 10 cents in March. It should be understood in studying these figures that the quoted values are the prices in the countries of origin, and do not include transportation costs or U. S. duties.

Table I

Imports of Dutiable Papers and Paperboards

GRADE	May 1948 POUNDS	May 1948 VALUE	May 1949 POUNDS	May 1949 VALUE
Printing Papers	14,817,461	$ 883,851	3,645,925	$ 214,944
Wrapping Kraft M.G.	1,466,956	148,228	207,830	10,864
Wrapping Kraft M.F.	909,790	78,434	896,311	48,345
Wrapping Sulphite M.G.	1,125,353	111,600	128,522	6,938
Wrapping Sulphite M.F.	149,115	17,169	—	—
Wrapping Other	358,752	40,130	60	20
Vegetable Parchment	4,136	3,686	119	78
Greaseproof n.s.p.f.	63	12	—	—
Writing	8,565	3,092	5,521	3,834
Drawing	19,110	14,555	2,478	963
Hand Made	7,684	5,245	9,035	6,198
Fancy Papers	4,143	6,943	17,709	12,822
Tissue not over 6 lb.	49,145	38,288	38,168	31,993
Tissue — other	353,825	66,365	32,094	23,051
Bible 10—20½ lb.	175	430	2,000	4,936
Pulpboard Rolls for Wallboard	4,749,816	170,100	4,092,267	127,058
Pulp and Paper Boards	6,703,469	311,793	9,961,288	568,433
Cigarette	—	—	185	95
Decalcomania Paper	44,221	14,431	125,340	43,329
Photo Basic	—	—	18,239	18,306
Crepe Paper	41,324	4,420	279,774	25,120
Other Paper	—	31,402	—	21,355
Totals		$1,950,174		$1,168,682

Table II

Imports of Dutiable Paper and Paperboards

GRADE	January—May 1948 POUNDS	January—May 1948 VALUE	January—May 1949 POUNDS	January—May 1949 VALUE
Printing Papers	65,905,600	$3,898,069	32,340,296	$1,921,507
Wrapping Kraft M.G.	3,909,739	403,361	677,238	54,361
Wrapping Kraft M.F.	7,653,111	621,794	2,820,706	201,579
Wrapping Sulphite M.G.	8,580,694	843,735	605,431	41,445
Wrapping Sulphite M.F.	1,470,984	152,256	117,326	8,890
Wrapping Other	956,250	101,511	57,311	3,086
Glassine	5,332	161	—	—
Vegetable Parchment	20,682	16,180	6,632	4,834
Greaseproof n.s.p.f.	29,219	6,239	17,216	7,222
Writing	43,143	18,596	35,692	18,614
Drawing	86,667	58,017	11,203	5,958
Hand Made	28,962	21,187	60,109	37,917
Fancy Papers	16,885	18,106	41,438	37,895
Tissue not over 6 lb.	359,367	180,171	182,882	142,440
Tissue—other	1,751,785	287,944	184,579	132,411
Bible 6-10 lb.	450	1,608	130	42
Bible 10-20½ lb.	44,256	28,885	4,586	9,431
Pulpboard Rolls for Wallboard	24,758,660	897,362	19,836,908	757,477
Pulp and Paper Boards	38,786,752	1,839,178	38,642,613	2,058,363
Hanging Raw Stock	228,820	12,591	28,254	2,664
Cigarette	512	452	2,524	2,611
Decalcomania Paper	699,199	209,356	767,861	256,788
Photo Basic	197,978	82,439	228,192	109,548
Crepe	546,712	68,763	1,407,447	129,612
Other Papers	—	94,250	—	96,924
Totals		$9,862,211		$6,041,619

CARLOADINGS . . .

Canadian Carloadings

OTTAWA—Carloadings on the Canadian railways of woodpulp and paper declined to 2,803 cars in the week ending July 2 this year as compared with 3,605 cars in the preceding week or 3,701 cars in the similar week of last year, with the Eastern Division accounting for 2,434 cars in week ended July 2 as against 3,169 cars in previous week or 3,310 cars a year ago in same week and the Western Division showing 369 cars in week ended July 2 against 436 in preceding week or 391 cars a year ago in corresponding week, the Canada government reports.

Carloadings of such revenue freight of woodpulp and paper dropped to a cumulative total of 104,822 cars in the period from the beginning of 1949 until the week ending July 2, as compared 113,120 cars in the corresponding period of last year. The Eastern Division decreased to a total of 91,548 cars this year as against 98,938 cars a year ago in the similar period and the Western Division fell down to a total of 13,274 cars this year as compared with 14,182 cars last year in the corresponding period.

Demurrage

By EDWIN CHESTER HASTINGS

Demurrage is a term used by the rail carriers to cover penalty charges assessed on cars that are not released within the time allowed for loading and unloading. The shipper has two days' free time after actual placement on the siding where the carrier spots the car for loading. Most cars are spotted at night.

The "free time" (in most cases) begins at the first 7 a.m. after placement. If the car isn't loaded within the 48-hour free period, demurrage accrues with increasing rates on the days following. The charges that accrue while the car is on the shipper's siding are expenses that can't rightfully be collected from the consignee even though the latter agrees to pay all freight charges. Transportation charges do not begin until the car is delivered to the carrier for movement to destination. Expenses previous to this movement are chargeable to the shipper and should be collected by the carrier at the origin point. However, once the car reaches destination and demurrage accrues, the consignee is responsible to the carrier for payment in addition to the freight charges.

The consignee is allowed two free days to unload the car after actual placement. Demurrage at destination will accrue if the conditions are similar to those previously cited concerning the shipper. Demurrage often starts before the car is placed on the consignee's siding. This happens when a car arrives and the consignee's siding is loaded with other cars. The carrier, while ready to deliver the car, can't do so because the consignee hasn't room on the siding. The car then is placed on a track in the rail yard for delivery to the consignee when convenient. This is known as *constructive placement*. While the car hasn't reached the consignee, time starts the following morning, and after the two days' free time, demurrage charges are assessed for every day until unloaded and released to the carrier.

The terms Constructive Placement and Actual Placement are similar in some degree, that is in computing time. There is, however, some difference in location application.

Constructive Placement implies that the car is placed on a track in the rail yard because the consignee's siding is blocked with other cars.

Actual Placement, as the term implies, means placement on the public team track or the plant siding.

Actual Placement is made when the car is placed in an accessible position for loading or unloading at a point previously designated by the consignor or consignee. The "plant siding" may lead to miles of tracks entirely used by one paper mill. Large mills with track mileage generally have their own train crews and motive equipment to do intramill switching. There are also many mills with an arrangement where the carrier supplies a yard crew for moving cars in the plant. This is mostly done at night and the mill notifies the carrier where the cars are to be spotted in the plant yard.

Regardless of what arrangement is used, there is only one point where the inbound car is actually placed and the outbound car released. That point is where demurrage begins and ends.

The plant track is connected to the rail's main line by a switch. When cars cross that switch point the time is reported on the interchange. A copy of the interchange report is given to the plant *after* it is signed by the carrier and the plant. The report is worthless without the signatures in a dispute on demurrage claims.

Actually the carrier places cars beyond the plant switch point; to clear the "main line" the cars are shoved 45 feet past the switch stand. Cars are often placed at exactly 7 a.m. and time computed begins at the same 7 a.m. The carrier follows AAR's Rule 3, Section D "Actual Placement" determined by the precise time the engine cuts loose from the car or cars.

Demurrage rates after the expiration of free time are $2.20 per car per day for the first two charge days ($3.30 from October 15, 1947, to June 1, 1949); $5.50 for each day thereafter. Sundays and legal holidays are considered free days in addition to the two allowed by the carrier. These are not counted in computing time. As an example—suppose a car is placed on Friday, July 29, after 7 a.m. Free time starts at 7 a.m. on Saturday, July 30. The latter 7 a.m. is the *first* after actual placement. The 48 hours' free period are Saturday, July 29, and Monday, August 1. July 31 is on Sunday and doesn't count. If the car is released to the carrier *before* 7 a.m. (6:59) Tuesday, August 2, demurrage will not accrue. However, if the car is held Tuesday, August 2, and Wednesday, August 3, these two days are charged at $2.20 per day. If still held on Thursday, August 4, the charge is $5.50 and the same rate for each day thereafter. Free Sundays and holidays apply only on the *first part* of computing demurrage time. If the car isn't released before Sunday, August 7, this day will be charged at $5.50. Previous to June 1, the rate for Friday, August 5, would have been $11; Saturday, August 6, and Sunday, August 7, $16.50 each. (See ICC's Service Order 775 "Vacated," later in this article.)

Demurrage is a complicated and confusing subject and it is a simple matter for one to become "lost" in the tariff rules. The calendar dates, Table I, may clarify what has been previously said: If the car is placed *before* 7 a.m., that is 6:55 a.m. on Friday, July 29, the free time starts at 7 a.m. or five minutes after "engine cuts loose." This means that Friday and Saturday are free days; Sunday isn't counted; Monday and Tuesday are $2.20 charge days; Wednesday and the days following are $5.50 arbitrary days.

Shippers and consignees are subject to one of two Plans with the railroad. Demurrage is covered by either the Straight Plan or the Average Agreement. Firms with freight shipments above the average spasmodic movements usually sign an Average Agreement with the carrier.

TABLE II

Demurrage Charges Effective September 1, 1949

September 1949						
Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
				1 car placed am/pm	2 Free day	3 not counted
4 not counted	5 not counted (Labor Day holiday	6 free day	7 charge day $3	8 charge day $5	9 arbitrary $6	10 days $6
11	12	13	14	15	16	17

Arbitrary for each day until car is released to carrier, $6.00.

TABLE I

Demurrage Rates After Expiration of Free Time

July 1949						
Sun 24	Mon. 25	Tue. 26	Wed. 27	Thu. 28	Fri. 29 Car placed after 7 am	Sat. 30 (free day) free time starts 7 am
August 1949						
31 not counted	1 (free day)	2 charge $2.20	3 days $2.20	4 arbitrary $5.50	5 $5.50	6 days $5.50
7	8	9	10	11	12	13

'Arbitrary' until released to carrier, $5.50 per day.

The difference between the two plans are:

Under the Straight Plan, cars are released to the carrier during the first 24 hours of the free period. Credits are not given for the unused portion. The "debits" are charge days that can't be cancelled with credits. In short, the carrier collects for all time over the 48 hours' free period.

Under an Average Agreement, which is a monthly plan, cars released within the period of free time are credited, that is, the cars loaded or unloaded within the first 24 hours earn one credit each.

Since 48 hours are allowed, the shipper and/or consignee is given one credit for the time not used. Credits earned are used to offset debits. When the car is held past the 48 hours' free time, a debit is charged for each day. A debit charge means $2.20. The car accrues four debits ($8.80) and then the charge is $5.50 per day, regardless if that day is Sunday or a legal holiday. The $5.50 rate is known as an "arbitrary." Credits can offset debits, but they can't cancel arbitrary days.

At the end of the month (7 a.m. on the first day of next month), the carrier totals the amount of credits and debits. The credits are used to cancel the debit or $2.20 days, with the limitation that no more than four credits can be applied to cancel debits on any one car. If the shipper and/or consignee has more credits than debits at the end of the month, he does not owe the carrier any demurrage, unless $5.50 arbitrary days have accrued. The excess credits can't be carried over into a new month. Also, the credits to cancel debits apply separately to loads and empties that is, credits earned on cars held for loading (empties) can't be used to offset debits that accrue on cars held for unloading (loads), nor can credits earned on cars held for unloading (loads) be used to offset debits accrued on cars held for loading (empties).

On October 15, 1947, the rates of demurrage were changed by ICC Service Order 775. The purpose of an "Order" is based on the Commission's opinion that "an emergency exists" in certain sections or all parts of the country. S.O. 775 had a national application, that was: "cars delayed unduly in loading and unloading, thereby causing a shortage of equipment."

The ICC Act, Part I, Section 1, Par. 15—vests the Commission with authority to control services and equipment of all rail carriers. The authority is made known to the carriers and the shipping public in published Service Orders. Generally the Orders are subject to exceptions whereby permits are granted to the firm shipping or receiving freight.

S.O. 775 related to Demurarge Charges on railroad freight cars and it has been modified many times. The Order changed the $2.20 to $3.30 per day, also, instead of the $5.50 rate for each day following the first four days, the $5.50 became the rate for the third "charge" day; $11 for the fourth day; $16.50 for the fifth day and this latter amount applied on the days following thereafter. These rates remained in effect until 11:59 p.m., May 31, 1949, when the Commission vacated the Order, and the rates reverted as previous to October 15, 1947. Thus the present rates are $2.20 and $5.50.

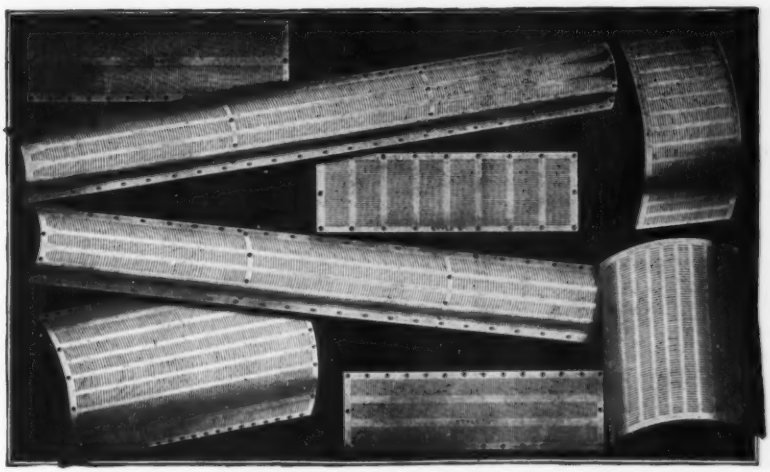
Demurrage Increase September 1

On September 1, 1949, demurrage will be increased above the present rates. The adjustmeit is due to two things; (1) the carriers are required to adopt the 40 hours per week basis and (2), the rate (per diem) they pay for the use of foreign cars is $1.50 per day. (ARR's Code of Per Diem, Rule 1—$1.50 for American and Canadian cars; $2.05 for Mexican cars, added 55c tax.

The revised rates will be published in Agent B. T. Jones' Demurrage Tariff, 4-Y, AAR Car Service and will be effective September 1, 1949.

Under the Straight Plan, after the first two free days, the demurrage rates will be $3 (now $2.20) per car per day for the first four charge days and $6 (now $5.50) eache day there after.

Under the Average Agreement, the



"HARDY" BRONZE and CHROME-NICKEL-STEEL SCREEN PLATES.

MAGNUS METAL CORP. FITCHBURG, MASS.

YES! GO WEST! 1949 FALL MEETING TAPPI, PORTLAND, OREGON.

same rates, except the $3 charge will be considered debit value. If the cars are released within the first 24 hours, one credit for each car will be allowed of equal value. After the car has accrued four debits ($12) then a charge of $6 per car per day will be made. This means, for those two free days allowed the shipper to load or the consignee to unload, the railroad is required to pay $1.50 per day to the carrier owning the car. On those days the shipper or consignee pays demurrage.

Part of the resulting $3 and $6 will be used as per diem by the carrier. Saturday, like Sunday or a holiday, will be regarded as free on both the Straight Pan and the Average Agreement. When a holiday falls on Saturday the following Monday *will not* be a free day.

The number of holidays considered at present are all those regarded as legal. After September 1, the number will be seven nationally observed, these are — (February 22) Washington's Birthday, (May 30) Memorial Day, (July 4) Independence Day, (September) Labor Day, (November) Thanksgiving, (December 25) Christmas. See Table II.

In Case of Labor Trouble

Firms can avert paying heavy demurrage charges when the plant is tied up by labor trouble. When a sudden strike closes a plant, the cars on the siding are left idle and the carrier will place those in the rail yard unless advised otherwise. In such cases, the firm should advise the carrier *in writing* at once. If this is not done, full demurrage charges will be assessed. The rule is to make the claim within 30 days after the strike starts. There is a special rate and it is rather odd for firms to neglect the written notice on the basis "the carrier should know there is a strike when the event has been published in the daily newspapers."

The plan at present is that if the holiday falls on Saturday the following Monday will not be a free day. In this case the holiday is the reverse. One can expect the plan to be amended to provide that where the holiday is on Monday the previous Saturday will not be free. Such a public notice isn't official to the carrier as the latter has to have an order in writing from the firm. A claim filed later for excess demurrage means nothing if the shipper or consignee based the plea on the "carrier should know."

Demurrage Strike Rates

Previous to February 15, 1949, the demurrage strike rate was $1.20 per day, it is now $1.80 for each day including Sundays and legal holidays, and without allowance for free time.

Interruption to a plant's normal business where the inbound and outbound freight is stopped could force the firm to pay excessive demurrage charges due to a condition over which they have no control if the above reduced rates were not in effect. We live in strange times when employes and their union leaders know that by walking off the job "not a wheed will turn". The phrase is only half true, for inbound freight will roll into the plant even though there aren't employes to unload the cars. Until the plant advises the carrier to hold the cars in the rail yard, they will roll, regardless of picket lines across the plant tracks. Very few strikers are willing to risk their lives by refusing to move from the path of a moving yard engine. To block the rails with an obstruction is interference with interstate commerce —these things are violations of federal laws and the firm is justified in seeking aid from the courts.

Regardless of the differences that brought on the strike, the firm is in a peculiar position. With freight problems, unable to ship finished orders, cars loaded with raw materials waiting delivery it would be unfair to have to pay full demurrage rates. To meet such situations, provision is made for the shipper and/or consignee and the condition is covered by AAR's Car Demurrage Claims—Rule 8, Section G: *Interference due to strikes*, which reads:

"(1) When, because of a strike of its employes, it is impossible for the consignor or consignee to load or unload cars or to receive inbound cars from or to make outbound cars available to the railroad, detention to cars due to ath cause from the first 7 a.m. after such interference begins until the first 7 a.m. after such interference ceases, will be excluded in computing free time provided in Rule 2 (Free Time Allowance), and computing charges provided in Rule 7 (Demurrage Charges), or in Rule 9 (Average Agreement).—Such detention on loaded or empty cars (other than empty cars held for prospective loading, which have not been appropriated for loading, Rule 6, Section D empty cars for loading) will be charged for at the rate of $1.80, per car per day or fraction of a day, including Sundays and legal holidays and without free time allowance; provided the consignor or consignee presents claim in writing to the railroad within 30 days, exclusive of Sundays and legal holidays, after the date on which interference ceases, stating the date and time such interference began and ceased."

Portland Rate Hearing, Aug. 1

PORTLAND, Ore. — A hearing to determine whether or not a four percent freight rate increase by railroads will be permitted in Oregon on three categories of shipments has been set by the public utilities commission for Portland on August 4, Frank S. Clay, secretary-treasurer of the Portland Freight Traffic Ass'n., reports.

Group 1—Cement, hydraulic, masonry, mortar, natural or Portland, in packages or bulk; lime or powdered, and lime rock or limestone, agri- rock or limestone, crude, not crushed, ground cultural.

Group 2—Saw logs, viz; cedar cottonwood, fir, hemlock, larch, pine, poplar or spruce, 12 feet or over in length to be manufactured at sawmills into lumber, shingles or timber, at veneer mills into veneer or at pulp or paper mills into woodpulp.

Group 3—Pulpwood; paper stock, viz; pulpwood chips, mill ends an sawmill refuse.

A PUC order on January 26 exempted the general four percent increase which was effective on practically all descriptions of traffic—as to application on the above named commodities.

Trends

(Continued from page 7)

Export Market†

Cuba — Importers state that under normal circumstances U.S. wood pulp cannot compete with the Swedish product in the Cuban market. Although prices of pulp from each country were comparable in mid-1948, the Swedish pulp, which comes in rectangular bundles of sheets, is reported through the OIT to be more adaptable to Cuban conditions than the U.S. pulp which is shipped in rolls.

Cuba is dependent upon imports for all wood pulp requirements, 85 to 90 percent of which normally are furnished by Sweden. During war years when Swedish pulp virtually was unobtainable, the U.S. was the major source of supply.

† Source, OIT, U. S. Dept. of Commerce.

Building

- **FOR THE PAPER INDUSTRY**
- We design, build, and equip paper and pulp mills ... steam generating plants ... and facilities for eliminating stream pollution.
- Under one contract and one responsibility, we deliver jobs complete, ready for operation.
- We also furnish engineering reports and surveys. Current cost data available at all offices.

The H.K. Ferguson Co.
INDUSTRIAL ENGINEERS AND BUILDERS

THE FERGUSON BUILDING • CLEVELAND, OHIO
OFFICES IN NEW YORK, HOUSTON, CHICAGO, CINCINNATI AND LOS ANGELES

Peru—Market for imported pulp and paper is reported as uncertain because of frequent changes in Peruvian controls over foreign trade and exchange transactions. Order of December 3, 1948 (Decree - Law No. 16), which drastically revised former regulations, provided that only the Peruvian Government's requirements will be purchased with foreign exchange at the official rate (6.50 soles per dollar). The only other pulp and paper items which may now be imported are those on the official permitted list, practically all of which items may be brought in without license but with payment in foreign exchange purchased at the free-market rate (18.50 soles per $1 U.S. currency in February, 1949).

Peruvian Permitted List—Pulp, Paper

Mech. wood pulp.
Chem. wood pulp blchd.
Chem. wood pulp unblchd.
Cardboard covered with paper on one surface only, neither glazed nor glossed.
Special cardboard for stereotypes.
Newsprint in sheets or rolls.
Parchment paper or sulfurized paper.
Groundwood manila.
White printing paper, with or without groundwood.
Laminated paper or board weighing over 100 grams to 300 grams per square meter.
Squared paper for plans, cloth-backed or not.
Transparent tracing paper.
Paper for bookbinders.
Carbon paper.
Label paper, satined one side.
Paper for matrices of manifolding machines (stencil paper).
Filter paper.
Filter board.
Litmus, tumeric and similar reagent papers.
Transparent papers (cellophane, etc.).
Vulcanized fiber.
Airmail paper, onionskin and similar papers.
Corners, reinforcements, etc., of hardened board for trunks and suitcases.

Container Outlook Favorable
Part 2

South and Southeast Area—During the first quarter of 1949 production and shipments of corrugated and solid fibre shipping containers in the area indicate a reduction of almost 20 percent compared to 1948's period, and 10 percent as compared to the last quarter of 1948. There is no evidence of any shortages or bottlenecks interfering with production. Raw materials and other supplies are ample, with inventories equal or slightly above a year ago. Present demand is estimated at 10 percent below a year ago, and the outlook is considered favorable.

Comparing the first quarter of 1949 with the same period a year ago, and with the last quarter of 1948, production and shipments of folding and set-up boxes are off approximately 10 percent. It appears that this segment of the container industry has passed the war and postwar peak, and should operate at present production levels for the balance of the year.

Shipments of paper bags and multiwall shipping sacks in some localities are reported off about 15 percent compared to the previous year. Practically all mills have curtailed operations from 15 to 20 percent of total capacity. In general, shipping sack manufacturers in the area are making adjustments to meet a decrease in demand, and are proceeding cautiously.

New York and Middle Atlantic States Area—The outlook for the balance of the year appears good although this could change if general business conditions were to deteriorate appreciably. Competition in all categories of paper and paperboard containers has become extremely keen in this area.

Demand for paper and paperboard containers has been reported from poor in some instances to fairly good in other instances. In any case there has been a general decline in both dollar and physical volume from the levels of a year ago. Consequently most producers are launching into aggressive sales campaigns. Prices are approximately 5 per cent under 1948. Raw materials have not been reduced as much as container producers feel is necessary although the quality of stock appears greatly improved.

Midwest Area—Demand for paper and paperboard containers varied between companies and types of containers during the first quarter, but it is the concensus that a slight overall decline took place from the similar period a year ago. New-order volume was higher at the end than at the beginning of the first quarter of this

year but still somewhat below the level of the corresponding period in 1948. Prices were reported for the most part to be fairly static with further softening more talked about than actually occurring.

West Coast Area—Demand for paper and paperboard containers on the West Coast appears to have been fairly well in balance during the first quarter of 1949. In the Pacific Northwest area, set-up box output so far in 1949 has been reported between 2 and 5 percent below which reflects fairly accurately the reduced consumer buying at retail levels in this area, plus the close buying policies being practised currently by purchasers. In northern California, prices of paper and paperboard containers have sagged in the face of increasing competition from the East, the South, and the Southwest. In Southern California, there seems to be an underlying feeling that paper container acceptance is on the upswing. The reported popularity of many nonreturn paper containers for foods, liquids, ice cream, etc., is expected to be the sustaining factor.

More Labor-Management Committees

OTTAWA — Labor-Management Production Committees in Canadian industry continue to multiply. As of March 31, the Labor-Management Co-operation Service in Ottawa had on record 615 committees representing 275,024 workers compared with 346 committees at the end of the war, with the pulp and paper as well as paper products industries having now 40 committees with 31,966 workers represented.

AWARDS

ARMY AWARDS MADE

N. Y. QM Purchasing Office

QM-30-280-49-1368 covering PACKAGING AND CRATING ITEMS, to:

L. Hyman & Sons, 102 Prince St., NYC.—5,605 rolls Paper, Wrap, Kraft @ $.0547. 41,250 rolls Tape, Paper, Kraft @ $.1686 to .3666.

Barnett Paper Shredding Co., 1975 So. 4th St., Columbus, Ohio—138,375 lbs. PAPER, Waxed—$2.00 to $2.60 per CWT.

Delemar Paper Corp., 250 W. 57th St., NYC. —46,125 lbs. PAPER, Waxed—$67.80 per ton.

Pioneer Paper Stock Co., 448 W. Ohio St., Chicago, Ill.—96,750 lbs. PAPER from: $.036 to $.043 per lb.

Mid-West Wax Paper Co., 1109 Av. 1, Ft. Madison, Iowa — 1,875 rls. (Paper, Wrap, Greseprf., 36"†) @ $18.97 per roll.

Longview Fibre Co., 1 Montgomery St., San Francisco, Cal.—3,770 rls. Paper, Wrap. @ $1.6031./ 3,750 rls. Paper, Wrap. @ $2.1375.

This procurement is for the U. S. Army.

NAVY AWARDS MADE

N. Y. Navy Purchasing Office

Inv. No. 4901—covering PAPER, printing, offset book, to:

Oxford Paper Co., N.Y.C.—67,100 reams from: $2.69 to $8.25 per ream (2% 15 days).

Walker, Goulard, Plehn Co., Inc., N.Y.C.—62,700 reams from: $3.06 to $8.83 per ream (1% 10 days).

OBITUARIES

Alcide Massie, 77, a papermaker with the J. R. Booth Co. for 20 years prior to his retirement five years ago, died in a hospital at Hull, Que., on July 12 after a lengthy illness. He is survived by one son and three daughters.

Theodore Osmund, retired vice-president of the Columbus River Paper Mills and of the Oregon Pulp & Paper Co., died at his home in Portland, Ore., on July 11. Surviving him are his widow, Mrs. May E. Osmund; a son, Theodore H.; a brother, Alfred; and three sisters, Miss Stella Osmund, Mrs. Cora O. Hunt and Mrs. Otelia Rood.

George MacLeod, Ontario sales representative of Buntin-Gillies, Hamilton, Ont., died in Toronto on July 11.

Edward J. Johnstone, sales engineer of the Lockport Felt Co., Lockport, N.Y., for the last 18 years, died at his home in that city on July 11. Surviving are his widow and a son.

brightening

"Virginia" Zinc Hydrosulphite (ZnS_2O_4) is one of the most effective and economical brightening agents available to the pulp and paper industry. It is supplied expressly as a reducing, brightening, and decolorizing reagent for ground wood pulp, folding cover, and de-inked stock. "Virginia" is a prime producer of Zinc Hydrosulphite . . . the only producer of *high test*, 85-86 percent pure ZnS_2O_4. It is shipped in 250-pound, single trip steel drums.

Send for descriptive literature on "Virginia" Zinc Hydrosulphite. Write Virginia Smelting Company, West Norfolk 3, Virginia.

VIRGINIA

Zinc Hydrosulphite

AMERICAN PAPER AND PULP ASSOCIATION'S PRODUCTION RATIO REPORT*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1949		Corresponding Weeks—1948	
June 4	79.7	June 5	92.9
June 11	82.3	June 12	95.0
June 18	78.8	June 19	95.0
June 25 (Revised)	83.9	June 26	99.8
July 2	79.7	July 3	91.3
July 9	45.2	July 10	62.3

COMPARATIVE MONTHLY SUMMARIES

1948						1949	
Jan.	100.1	May	100.5	Oct.	99.1	Jan.	94.6
Feb.	99.8	June	95.7	Nov.	97.1	Feb.	92.8
Mar.	100.8	July	85.3	Dec.	87.1	Mar.	89.1
Apr.	100.8	Aug.	96.8	Year avg.	96.2	Apr.	85.1
		Sept.	91.8			May	82.7
						June	80.9§

§ Preliminary

COMPARATIVE YEARLY SUMMARIES

	1942	1943	1944	1945	1946	1947	1948	1949
Year to Date	96.3	87.6	87.2	87.6	99.1	103.6	98.4	86.2
Year Average	90.4	87.8	88.1	89.4	101.1	104.3	96.2	

PAPERBOARD OPERATING RATIOS†

Current Weeks—1949		Corresponding Weeks—1948	
June 4	65	June 5	87
June 11	79	June 12	101
June 18	78	June 19	97
June 25	80	June 26	97
July 2	75	July 3	89
July 9	38	July 10	56

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1948	99	100	102	102	100	94	81	92	91	96	94	84	95
1949	88	85	79	79	78	75							

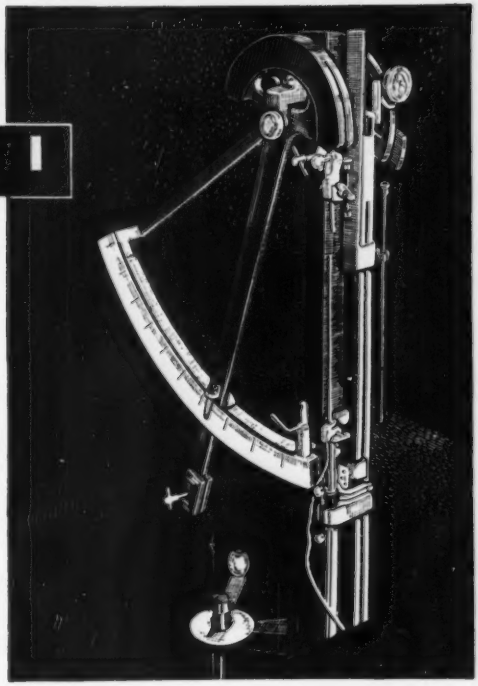
* All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Percents of operation based on "Inch-Hours" reported to the National Paperboard Association.

control

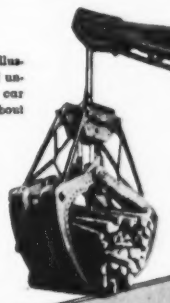
•
•
•

Each strand of wire produced by Appleton is carefully tested for tensile strength and elasticity. To pass these tests, Appleton Wires must be Good Wires.

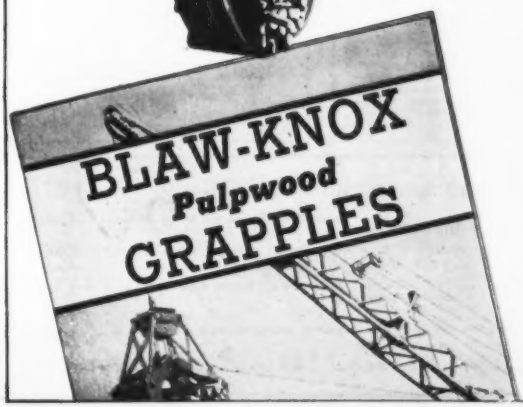


APPLETON WIRE WORKS, INC.
APPLETON, WISCONSIN

Size 16 grapple illustrated is capable of unloading an entire car of 18 ft. logs in about five minutes.



Lift the One You Need Right Out of Bulletin #2043



Wherever pulp wood is handled you'll find Blaw-Knox grapples doing a fast, economical job — loading, unloading and stacking . . . From the photos, drawings and specifications contained in Bulletin No. 2043 you can select the one best suited to your needs. Write for it today.

Send for your copy of Bulletin No. 2055.

BLAW-KNOX DIVISION
OF BLAW-KNOX COMPANY
2055 Farmers Bank Bldg., Pittsburgh 22, Pa.
New York • Chicago • Philadelphia • Birmingham • Washington

CLEARING HOUSE

HELP WANTED

$250-$475. Control Chemist-Chem. Engr. or Chem. Degree. Sulphate experience. 24-35.

$310-$420 Groundwood Dept. Four Foremen, 15 years exp. Groundwood Mills. 35-50.

$335-$455. Utilities Foreman. Some Mech. Engr. training. 25-45.

Instrument Mechanic. Exp. instrument control service. Under 45.

Roll Grinderman. Minimum of 5 yrs. as machinist with exp. roll or cylinder grinders.

$310-$420.. Laboratory Foremen. Chem. Engr. or Chemist Minimum 3-5 yrs. exp. sulphate or Kraft lab. 25-40.

$395-$515. Sulphate Tour Foreman. 10 yrs. exp. operation sulphate pulping Equip. 30-45.

$395-$445. Wood Storage-Preparation Tour Foreman. 2-4 yrs. exp. wood handling operations. Knowledge wood handling equip. Supervise Colored labor. 25-40.

$335-$455 Millwright Foreman—5-10 yrs. paper mill maintenance exp. some rigging and machine shop exp.

$310-$420 Shop Foreman—10 yrs. machine shop exp. Working knowledge blue prints, machine shop math, sheetmetal.

RICE EMPLOYMENT AGENCY
Radio Center Building
Little Rock, Arkansas J-21

SALESMAN WANTED

New York City Distributor selling **TECHNICAL** and **COURSE PAPERS** to Industrial and Converting Concerns has opening for salesman with established trade. Replies confidential.

Address Box 49-347, Paper Trade Journal.
J-21

SALARIED POSITIONS $2,500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (39 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
117 Dun Bldg., Buffalo 2, N. Y.
TF

PAPER AND BOARD PLANT requires foreman for die-cutting department. Should have complete knowledge of paper conversion and be able to show good production results while maintaining good labor relations. Reply giving full information as to age, experience, salary, etc. Address Box 49-333 care Paper Trade Journal. J-28

WANTED—Young man experienced in manufacture and sales vulcanized fibre. Address Box 49-341 care Paper Trade Journal. TF

WANTED—Machine Tenders, Back Tenders, Beater Engineers, Night Supt. and Winder-men, for 7 Cylinder Machine, manufacturing Folding Boxboard, Chip and Test Liners. Must be thoroughly experienced operators. Others need not apply. Address Box 49-328 care Paper Trade Journal. J-21

HELP WANTED

MEN WANTED
Positions Open

Fourdrinier machine superintendent, kraft papers and carbonizing tissues; chief chemist, tissue mill, $5,000-$6,000; four boss Yankee machines and pick up felt on Fourdriniers; Fourdrinier and Yankee machine tenders.
Assistant power and electrical engineer, Mid West mill, $400 to $500 month."
We invite correspondence (confidential) with mills seeking executives and with executives seeking new positions.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington Street, Boston, Mass.

WANTED—Pulp Mill Superintendent Soda and Sulphite Process. Tomlinson furnace, continuous causticizing. Write giving experience, where worked, compensation paid and what compensation now desired. Address Box 49-331 care Paper Trade Journal. J-21

WANTED—Sales Manager by a long established reputable paper concern selling newsprint groundwood specialties and printing papers. Mill connections essential. Write giving details, experience and qualifications to Box 49-350 care Paper Trade Journal. J-28

SITUATIONS WANTED

OPPORTUNITY WANTED

Seasoned executive possessing mature balance, keen perspective and inherent tact seeks position where competence, trust, and unusual ability are required. Technical and practical knowledge of paper making, converting and specialty treatments accrued during 20 years experience in production, research and technical sales.
Address Box 49-335 Paper Trade Journal A-4

FINE PAPER MILL EXECUTIVE with over twenty-five years experience in Sales, Administration and Management invites correspondence with any principal seeking the services of an able executive with these qualifications.
Experience covers the manufacture and sale of Rag and Sulphite specialty papers used by the Graphic Arts Industry and special applications in the industrial field. Address Box 49-346, care Paper Trade Journal. A-4

SALES MANAGER

Sales and administrative executive available. Now Director of Sales with national organization. Highly successful background of experience in large scale sales management in Paper Industry, product development and merchandising, packaging and advertising. Aggressive, forty years old, married. Engineering education. Box 49-349, care Paper Trade Journal. J-21

SITUATIONS WANTED

EXECUTIVE—Board and paper conversion mill experience, excellent production and labor relations history, currently plant manager. Seeks opportunity. Address Box 49-239 care Paper Trade Journal. J-28

MILL SUPERINTENDENT or Assistant—Thorough experience in all grades of Tissue and Specialty Grades, desires new connections. Excellent production and labor relations background. Best references. Address Box 49-330 care Paper Trade Journal. J-28

AVAILABLE—Manager or Sales Manager for coarse paper jobber. Twenty years experience in buying, selling and sales promotion. Thoroughly versed in all types of twines, coarse paper, specialties and most fine papers. Extremely capable and hard working. Will locate anywhere. Address Box 49-338 care Paper Trade Journal. A-4

BAG MAN—ADJUSTER with twenty three years experience on flat and square machines. Desires connection with company as Adjuster, Foreman, or both. Address Box 49-343 care Paper Trade Journal. J-28

YOUNG, AMBITIOUS, technically trained and sales personality. Nine years experience in paperboard, packaging, pulping, various papers as chief chemist; technical advisor. Desires connection with present responsibility and future. Address Box 49-351 care Paper Trade Journal. A-4

FOR SALE

FOR SALE or RENT

Paper Mill with 3 Fourdrinier Machines, complete with auxiliary equipment. Designed for 60 tons of Specialties, News, Book, Toweling, Kraft, etc. Can be put in operation immediately. Covers 80,000 Sq. Ft., Buildings fully sprinklered, Railroad Sidings, excellent water, 1800 H. P. stoker-fired water tube Boilers installed 1936. Excellent labor conditions. All located within radius 100 miles New York City, Baltimore, Washington. Immediate possession. Attractive proposition!
Address Box 49-300, care Paper Trade Journal.
TF

GOOD VALUES—NEW & USED

34" Beck Sheeter, one year old.
58" and 78" Hamblet Sheeters.
34" Camachine No. 6 Slitter.
32" Hobbs and 34" Inman shear cut Slitters—very cheap.
39" Chandler & Price Automatic Power Paper Cutter.
New 44" National Auto. Power Cutters and 36" National Hydraulics.
Baling Presses—both hand and power.
Brackett 3-knife Trimmer.
28 x 41 Thomson Cutter & Creaser.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.)
TF

RATES FOR CLASSIFIED ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $2.50. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $2.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $2.50.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional.

Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 18, N. Y.

TELEPHONE
HUMBOLDT 2-2177

CABLE ADDRESS: JACKROSS

ROSS PAPER MACHINERY CO.

265 PASSAIC STREET
NEWARK 4, N. J.

CONVERTING
PAPER MAKING EQUIPMENT

NEW, USED, REBUILT
PAPER AND PULP MACHINERY

1—Pusey & Jones 120" Ball Bearing Fourdrinier Paper Machine. 60" diameter dryers—suction press and suction couch—Spiral Bevel Gear Drives.
1—Pusey & Jones 82" Fourdrinier Machine Complete.
1—7 cylinder 120" Board Machine, 82 Dryers, 42" diameter. Complete with all auxiliaries.
1—6 cylinder 132" Board Machine, 67 Dryers, 42" diameter. Complete with all auxiliaries.

BEATERS

2—Valley Iron 750 lb. Iron Tub—Bronze filled.
1—Downingtown 2000 lb. Beater Roll—60" x 60" —with perforated bank fall. Iron tub.
1—E. D. Jones 2000 lb. Beater Roll—62" x 60". Iron tub and bottom.

BLOWERS

8—Blowers and Mill Exhausters

CALENDER ROLLS

54 Chilled Iron Rolls—Assorted sizes.

CALENDER STACKS

1—104" face 5 roll stack, with drive
1—76" face 7 roll with drive.
1—76" face 3 roll with drive.
1—112" face 7 roll.
1—82" face 5 roll Sandy Hill.

CONVEYOR

1—18½ ft long x 30" wide—with motor.

COUCH ROLLS—BRASS

1—104" face x 18" dia
1—118" face x 18" dia
1—150" face x 18" dia
1—82" face x 18½" diameter.
2—84" face x 21⅝" diameter.

COUCH ROLLS—RUBBER

1—110" face x 20" dia.—New
1—139" face x 19" dia.

CYLINDER MOLDS

4—IMPCO 40" diameter x 84" face.
3—39" diameter x 136" face Cylinder molds with vats, couches—ball bearing.
3—74" face x 36" diameter.
1—134" face x 36" diameter, with stainless steel shafts.
1—78" face x 30" diameter.

CYLINDERS AND VATS

1—136" face x 36" dia.—with vats, couch, complete.

DRIVES

1—8C. Reeves Drive. 40-50 h.p.—Ratio 4 to 1.

DRYERS

4—74" face x 29" diameter with gears.
5—143" face x 48" diameter.
3—124" face x 48" diameter.
4—60" face x 36" diameter.
1—77" face x 48" diameter—with gear.
1—44" face x 36" diameter.
18—72" face x 36" diameter, complete with 2 deck frames, gears, bearings and steam joints. Drives, line shaft and felt rolls are available.
1—78" face x 18" diameter with gears and bearings.
2—40" face x 24" diameter—chromium plated.
1—120" face x 16" diameter—Baby Dryer.
11—64½" face—36" diameter with 2 deck frames, gears and bearings.
3—63¾" face—36" diameter—bearings and gears.
2—62¼" face—36" diameter—bearings and gears.
6—96" face x 48" diameter.
95—128" face x 42" diameter.

EXTRACTOR ROLLS—VACUUM

1—Downingtown—64" face x 17" diameter with bearings & stand.

FLAT SCREENS

3—10 plate Sandy Hill.
1—Sandy Hill 8 plate—with scraper.
1—New Sandy Hill 12 plate, with scrapers and V-belt drive.
1—Montague 6 plate—ball bearing.

FOURDRINIER SECTIONS

1—P & J 156" x 80 ft. ball bearing. Complete from inlet to 22" diameter suction couch. Brass and Rubber covered table rolls. 6 Brass Suction Boxes operated at 1000' per minute.
1—M & W 82" x 40' complete with 3 suction boxes, shake, 3 section presses and size press.

HAMMERMILLS

1—American Hammermill—37" ball friction bearing equipped

HEAD BOXES

1—118" Bronze Lead Lined, Bevolt.

INLETS

1—Voith Inlet for 151" wire with 29" slice. Complete, including drive.
1—86" All bronze—adjustable.
1—141" Beloit complete with distributor roll.

JORDANS

2—Jones Standard, with motor bases and coupplings.
1—Jones Stangard—ball bearing direct connected to 150 h.p. G.E. 440 volt motor
1—#3 Miami, for motor drive.
1—Jones Majestic, roller bearing—stainless steel fillings—for motor drive.
1—Jones Majestics with base and coupplings—bronze filled, 2 sets of new bronze fillings.
2—#3 Appleton with base and coupling—bronze filled.
1—Dillon Horse #2—direct connected 75 h.p. Stainless steel ¼" filling.
1—#4 Smith & Winchester—Ball bearing

MOTORS

1—Fairbanks Morse — 30 h.p. — 495 r.p.m. — 220/440/550.
1—Reliance 25 h.p. ball bearing, 550 v., 3 phase, 60 cycle—1750 r.p.m.
1—General Electric 150 h.p.—440 v.—3 phase—60 cycle—600 r.p.m.
1—General Electric 200 h.p. induction, 440 v. 3 ph. 60 cyc. 300 r.p.m. with GE starter.
1—General Electric 350 h.p. synchronous type TS 440 v. 3 ph. 60 cyc. 400 r.p.m. with exciter GE starting panel.

PRESS ROLLS

1—110" face x 15" diameter—rubber.
1—101" face x 18½" diameter—rubber.
1—125½" face x 17½" diameter—rubber.
1—112" face x 15" diameter—rubber.
1—127" face x 17⅛" diameter—brass.
1—117" face x 24" dia.—Brass.
1—84" face x 20" dia.—Rubber.
1—178" face x 22" dia.—Rubber.
2—118" face x 21" dia.—Rubber.
1—147" face x 11⅝" dia.—Rubber.
1—74" face x 18" diameter—Rubber.
1—100" face x 17" diameter—Rubber.
1—138" face x 22" diameter—Brass.
1—102" face x 18" diameter—Rubber.
1—119" face x 17" diameter—Brass.
1—78" face x 19" diameter—Brass.
1—53" face x 14" diameter—Brass.
1—53" face x 12" diameter—Iron.
1—55" face x 16" diameter—Iron.
1—74" face x 16" diameter—Iron.
1—73" face x 14" diameter—Iron.
1—102" face x 18" diameter—Brass.

PULLEYS

30—Split cast iron tapered Pulleys.

PULP EQUIPMENT

1—Jagger—1 deck—vibrating screen.
1—Wills & Morrill 217 Pulpwood chipper.
1—5' Carthage Disc Barker
1—22" Carthage Ball Bearing Chipper—4 baffle

PULPERS

1—#2 Lamoyne Pulpers

PUMPS

44—Centrifugal Pumps. Direct connected, Belt Driven. Extended base for motor. Assorted capacities and heads. Most used less than one year.

PUMPS—OPEN IMPELLER

1—Morris open impeller—8" suction—8" discharge —Belt driven.
1—Morris Vertical Open Impeller 8 x 6—500 g.p.m. 5 percent stock—50' head—connected to G.E. 15 h. p. 220-440 volt 3 phase—60 cycle—1165 r.p.m.
1—New Gould—ball bearing—6" suction—4" discharge—700 g.p.m.—60' head. Requires 20 h.p. at 1750 r.p.m.
1—New Gould—ball bearing—8" suction—6" discharge—1500 g.p.m.—45' head. Requires 25 h.p. at 1150 r.p.m.
1—New Goulds—ball bearing—8" suction—6" discharge—1200 g.p.m.—60' head. Requires 25 h.p. at 1150 r.p.m.
1—New Gould—ball bearing—8" suction—6" discharge—1800 g.p.m. 45' head. Requires 25 h.p. at 1150 r.p.m.
1—New Gould 6" suction 4" discharge 500 g.p.m. 40' head. Requires 15 h.p. at 1750 r.p.m.
1—Warren—10 x 6. 1000 g.p.m.—30' head—Belt driven.
1—Frederick—6 x 4. 400 g.p.m.—30' head—for motor drive.
1—Warren—4 x 3. 300 g.p.m. 30' head. Belt driven.
1—De Laval 6 x 6. 250 g.p.m. 30' head—for motor drive.
1—De Laval—6 x 5. 500 g.p.m. 30' head—for motor drive.

REDUCERS

1—Cleveland 50 h.p. Ratio 10 to 1. Right angle.
1—De Laval 65 h.p. Ratio 2.24 to 1—616 r.p.m.
1—Falk 60 h.p. Ratio 13 to 1. R.p.m. 1470-113. Herringbone gears.

REELS

2—Beloit 110" two bowl Reel.
1—M & W 76" 2 bowl reel.
1—Beloit 132" two bowl upright reel.
1—Beloit 116" two bowl upright reel.

ROLLS

2—18" diameter x 120" face with ball bearings and stands. Bored for steam.
250—Brass, Steel Rolls, Assorted sizes.

ROTARY SCREENS

3—Jones Lollwalk—cylinder 84" face x 29" diameter.
1—#2 Leith-walk-ball bearing.
1—#3A Bird with motor. Used less than 1 year.

SCREW PRESSES

2—Valley Voith Screw Presses Size 7A with new spare sets of plates.

SHEETERS

2—Hamblet 81" Single Knife with 8 roll bank stands and motors.
1—Hamblet 81" Single Knife with 8 roll bank stand and motor.
1—Beloit Duplex 104", complete with drive.
1—Hamblet Duplex—136".

SHREDDERS

3—Garrett Waldron Cutters — type F-11 — 30" knives. Used 30 days.

SLITTERS AND WINDERS

2—Pusey & Jones 100" high speed slitters and rewinders.
1—New 208" Camachine 20. Operates up to 5000' per minute.
1—42" Cameron Model 6, with 15 slitters.
1—New 50" Cameron Model 6.
1—Beloit 2 drum 125" with 8 slitters.

STUFF PUMPS

1—Beloit 10 x 20 triplex—with motors and chain drives.

SUCTION COUCH ROLLS

—Millspaugh 22" diameter x 150⅝" suction face.
1—Millspaugh 22" diameter x 138" drilled face.
1—Beloit 102" drilled face x 22" diameter. Anti friction bearings.
1—Millspaugh—14½" diameter x 93" drilled face.

SUCTION PRESS ROLLS

1—Downingtown 25" diameter x 100" drilled face.
1—Beloit 22" diameter x 105" drilled face for direct drive. Anti friction bearings.

SUPER CALENDERS

3—7 roll 62" face.
1—7 roll 68" face.
1—7 roll 56" face.

TRIMMERS

1—84" Seybold Precision with motor and five spare knives.
1—98" Universal Trimmer

VACUUM PUMPS

1—H2 Nash for motor drive.

YANKEE DRYERS

1—Beloit 10' diameter x 132" face with stands, gears, bearings and drive.
1—Beloit 12' diameter x 132" face with stands, gears, bearings and drive.

AMERICA'S LARGEST BUYERS OF PAPER MAKING MACHINERY

FOR SALE

BALER
1—1000 lb. Economy with motor

BEATERS
2—64 x 54 Jones iron tub, stainless steel bars
2—78 x 55 Rabus, bronze filled rolls
2—65 x 57 Jones iron tub, perforated backfall

SUPER CALENDERS
108"—82"—74"—60"

SHEET CUTTERS
1—130" Horne duplex
1—New 104" Hamblet duplex with layboy and unwind stand
1—94" Clark with layboy
1—82" Dillon duplex with folder
1—84" Hamblet duplex, heavy, Model 28, duplex layboy
1—70" Clark
1—64" Hamblet

REAM CUTTERS
1—56" Smith and Winchester
1—50" Oswego
1—48" Acme

DRYERS
1—12 ft. x 106" Yankee
1—12 ft. x 132" Yankee
2—8 ft. x 174" Yankee
5—60" x 174"
3—48 x 126"
2—48 x 118"
4—48 x 120"
1—42 x 126"
33—36 x 80"
21—36 x 76"
2—42 x 73"
2—48 x 73"
16—36 x 62"
15—48 x 46"
4—54 x 40"
7—36 x 38"

EMBOSSERS
45" Dornbusch
30" Waldron
26" Textile, three sets rolls

MOULDS
2—42 x 121"
8—36 x 126"
7—30 x 102"
2—42 x 52"
2—36 x 92"
1—60 x 84"
1—48 x 84"
4—30 x 78"
2—36 x 46# De-Inker with vats, etc., rubber couch

JORDAN
1—#2 Appleton
1—New Mammoth Jr.
1—New Pony

FRANK H. DAVIS CO. 175 Richdale Ave., Cambridge, Mass. TF

FOR SALE

Will Sacrifice

1—9" x 12" American Ball Horizontal Twin Slow Speed Automatic Steam Engine with two 3" Pickering Governors, Speed Regulating Changer, Automatic Lubrication. 150 Horse Power.

1—96" Murray Chipper, roller bearing, complete with 150 HP, 200 RPM, direct connected synchronous motor, automatic full voltage, starting panel and MG Set. Three sets knives.

All above equipment may be observed in operation and is in good operating condition. Address Box 49-353, care Paper Trade Journal. A-4

FOR SALE

72" Type 10 Model 6 CAMACHINE. Practically new. Speed 1500' per minute. 20 sets of precision cutters. 4 rewind shafts. AC motor equipment. Delivery at once.

Address Box 49-345, care Paper Trade Journal. J-21

FOR SALE—Equalizers or wire wound Doctor Rods for paper coating machines. Precision wound on ⅛, 5/32, ¼ & 3/8 rods with spring steel music wire. DE NEVE & CONSLER CO., P. O. Box 817, Rochester 3, N. Y. J-21

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon, Laboratory Coating and Treating Machines. New improvement. MAYER MACHINE COMPANY, Inc., 1313 Buffalo Road, Rochester 11, N. Y. TF

FOR SALE

1—64" trim twenty five ton six cylinder board machine with auxiliary equipment, now running.

1—38" trim one cylinder machine with eighteen dryers 28" x 42", six roll calender.

1—165" Fourdrinier with 25" dia. suction couch ran 800 F.P.M. also 2 sets of 160" Face Presses.

1—165" x 22" dia. suction Press Roll.

Address Box 49-329, care Paper Trade Journal. J-28

FOR SALE—Dyno Pulper—8 foot—Used less than two years. Perfect condition. Inquire: Simplicity Pattern Co., Inc., Niles, Michigan. J-28

FOR SALE—Rubber Covered Couch Roll 22" dia. x 90".92" face, shoulder to shoulder 106" 2 7/8" Journals with at least 2¾" thickness of good rubber complete with bearings. Rockton Felt & Paper Co., 1500 N. Hooker St., Chicago, 22, Ill. TF

FOR SALE—New Felts in the original wrapping at substantial savings. 2—Dryer Felts 88" x 55 Yds. 1—Dry Felt 88" x 45 Yds. and 1—Top Felt 92" x 122'. SANGAMON PAPER MILLS, INC., 137 W. Pershing Rd., Chicago, 9, Ill. J-21

FOR SALE—3 color 40" Aniline Press with 3 sets of 3 color Xmas design rollers. Address Box 49-352 care Paper Trade Journal. J-21

FOR SALE—106" Beloit 4 Ply Board Paster with 72" cut-off knife or with larger knife if necessary. Priced right for immediate sale. Address Box 49-246 care Paper Trade Journal. TF

FOR SALE—Noble and Wood Mill, complete with 12 shoes, 600 HP Induction Motor, Magnetic Controller and Extra Equipment. A.P.W. Products Co., Inc., P. O. Box 111, Albany, N. Y. A-4

FOR SALE—4 Lockport Bag Machines—1 Lockport 4 color Aniline Press—1 60 inch Langston Slitter—Perfect condition—Joseph J. Mellwig, 4428 Frankford Ave., Phila., 24, Pa. J-28

FOR SALE—50" Hamblet Sheeter with 5 roll back stand and Mace Piler. Very fine outfit; 72" Camachine 28, Model 3-D, like new, both available at once. Address Box 49-354 care Paper Trade Journal. J-28

FOR SALE OR LEASE

Small paper mill with cylinder machine. Situated advantageously to sources of raw material and sales outlet. Ample room for converting plant in same building. Terms. Address Box 49-357, care Paper Trade Journal. TF

FOR SALE

BEATERS—1—Laboratory one lb. beater, Valley Iron Works. 1—Horne Wooden Tub Beater. 1000 lb., roll, 52 x 48, with bed-plate, 60 HP motor, belt and starter.

BLOWERS—5—Ingersoll-Rand type, 8G 1-15, rated 1250 CFM, at 8 ozs., driven by 5 HP motors, 550 60/3.

CALENDER ROLLS—7—124" x 10¾", one 10" diam. 1—62" x 14". Two sets of calender frames and bearings.

DIGESTERS—2—Biggs Rotary Digesters, 14' diam. Good for 50 lbs. cooking pressure, large gear.

DRIVES—2 Black-Clawson mortise gear drives. 1—Noble and Wood Mill, with 600 HP motor and starter.

DRYERS—33—48 x 126, Moore and White, with bearings, packing glands and rope sheaves. Balancing dryers. 4—48 x 118, Bagley and Sewell, with stands, gears and bearings. 2—42 x 100, cast-iron high pressure dryers, 100 lb. Haug Refiner, Size 3, Type 3, anti-friction bearings. Mammoth Type D Jordan, ⅝" double steel filling. Miami 2/6 Jordan with water-cooled bearings, d.c. to 125 HP GE Synchronous Motor and direct connected exciter. No panel.

EMBOSSER—1—Hudson Sharp embosser, complete with 10 HP motor, 40", reel stands, rewinders and printing attachment.

FOURDRINIER WET-END—134" x 61'-2" wire, 25" suction couch. Cylinder Wet-end, 8 cylinder, 140", with suction roll, three sets of presses, framework for stack dryers.

INDENTING ROLLS—1 set, 10" x 72" rolls, with stands.

PLANER—1—Metal, 2' x 2' x 6', with open ends, 1 head, for gear-head motor drive.

PUMPS—1—Beloit Triplex Pump, 10 x 20, new in 1941. 1—Beloit Triplex Pump, 8 x 18, with 10 HP motor. 1—Beloit Duplex Pump, 10 x 20. 1—Shartle Duplex Pump, 10 x 20, with 15 HP motor. 1—Shartle Single Plunger Pump, with 5 HP motor.

REELS—1—Beloit revolving reel, 4 spool, with frames, three reels, clutches and drive. 104". 1—132" reel, Beloit, same as above, for 68" diam. rolls.

REWINDER—1—Beloit two drum rewinder, 128" with slitters and drive.

REWINDER—1—Pusey and Jones two drum winder, 122"F, with full set of slitters, anti-friction rider roll, drive.

SCREENS—3—Valley Iron Works 6 plate flat screens, with plates, 0.022 cut, motor drive and scrapers. 1—Appleton 10 plate flat screen with roller shoes, new vat, plates and motor drive. 2—Bird 6 plate Tailing screens, with scrapers. One 4 plate. 2—Bird No. 2 rotary screens with plates.

SUCTION ROLLS—1—Sandusky Suction couch, 25" diam. x 137" drilled face, with stands, bearings, and gear. 1—Sandusky Suction Press shell, 22" diam. x 138" drilled face, shell, 1-1/16" thick. 1—Beloit Suction Press Roll, 18½" diam. x 94" drilled face, rubber covered, with suction box but less heads. 1—Beloit suction press roll, 22" diam. x 129" drilled face, with anti-friction bearings, stands. Shell, 1⅛" thick. Rubber, ⅝" thick.

PRESS ROLLS—1—Stanite press roll, 21" diam. x 132"F.F. Jour. 6—25" diam. x 162" F. rubber covered rolls. 2—25" diam. x 126" F. rubber covered rolls.

TENSILE TESTER—Schopper, 15 lb./75 lb., hydraulically operated.

PAPER MILL STORES • P.O. BOX 40 • LOCKPORT, N. Y. J-21

FOR SALE

1—New Downingtown Suction Press roll, 24" diameter by 110" drilled face. Rubber Covered. Complete with anti-friction bearings and L-7 Nash Vacuum Pump.

1—Two-web Paper Converting Machine Co. Quarter Fold Napkin Machine. 13½ cut-off. With Embosser and Three color Printer. Capacity up to 30,800 per hour on printed stock.

1—Paper Converting Co.'s M.G.M. 3 web 13½" embossing napkin folder. Capacity 1800 Napkins per minute.

CAMERON SLITTERS

1—42" Type 40.

1—42" Type 6 with constant tension device and slitter grinder.

1—50" Type 28 Model 3D Duplex.

1—60" 28-3D Cameron Slitter.

1—52" Type 8-5.

1—62" and 1—65" Type 9.

1—62" Type 10-5.

3—62" Type 40-1AF.

1—40" Kidder Model SL Shear Cut Slitter & Rewinder. Complete with 60 sets of cutters and rewind shafts.

1—48" Inman Board Slitter and Rewinder. Rewinds 48" diameter rolls.

Power Paper Cutters: 5 Seybold: 40"— 10Z, 54" 20th Century, 54" Holyoke, 56" Dayton and 84" Seybold 2-H. 6 Oswego: 34", 38", 44", 50", 57" and 74". 2 Acme: 32" and 42". 1 White: 44". 1 S&W Undercut: 63".

1—65" and 1—84" waxing machine.

1—Brand New Potdevin #102 Flat and Square Bag Machine, making bags from ¼ to 6 lbs.

3—Potdevin Flat & Square Bag Machines. Models 292, 294 and 391.

1—Seybold Embossing Press. Platen 28 x 38. AC Motor Equipment.

1—30" Waldron Embosser, diamond, moire, and canvass patterns.

1—45" German Dornbusch Embossing machine with two sets of embossing rolls.

1—36" and 1—45" Beck Rotary Sheet Cutters with 3 roll backstands and jogger delivery table.

1—50" M&W Single Rotary Sheet Cutter with slitting attachment—3 sets of slitters. M&M Single Layboy—3 partitions and 9-roll triple-deck backstands.

1—60" Clark Aiken Rotary Sheet cutter with Erie layboy and 12 roll double deck backstands.

1—72" Hamblet Single Rotary Sheet Cutter with Slitting Attachment, Automatic Layboy and 12-Roll Double-Deck Backstands.

1—82" single Hamblet rotary sheet cutter with layboy and 24 roll backstands.

1—84" Hamblet roller bearing new duplex sheet cutter, Model 28, complete with slitting attachment, six pairs of slitters. With new Hamblet 84" electrically driven duplex layboy and two roll backstands for 38" diameter rolls.

1—96" Clark Aiken anti-friction bearing Single Rotary Sheet Cutter with slitting attachment. Moore & White 5 partition Layboy and 6 roll double-deck backstands. Excellent condition.

2—#2A Bird Screen, copper lined or lead and zinc lined vats.

6—Shartle Washer Breaker Beaters—Rolls 80" x 55".

1—81" Dietz Facial Tissue Paper perforator, 4½" perforation.

2—81" Dietz Toilet Paper Perforators. Sheets 4½ x 4½ and 4½ x 5 and paper towels perforated 7½" and 13½".

1—#4 Hudson Sharp Special Folding Machine, complete with A.C. motor equipment.

1—Spiral Tube Winder.

1—Heavy duty Miller Ream Wrapping and Sealing Machine for paper from 2 x 8 up to 8 x 15.

1—42" three-color German Kolback aniline printing press.

2—Lewis Shepard Stackers, 11' and 12'. Lifts. Capacity 2000 & 1500 lbs. Complete with A.C. motors.

GIBBS - BROWER COMPANY, INC.
21 East 40th St., New York 16, N. Y. J-21

WANTED

WANTED
Titaniums—Glycols
Alkalies—Waxes—Solvents
Colors—Oils—Residues, etc.
Chemical Service Corporation
86A Beaver St., New York 5, N. Y. J-21

WANTED
MULTIFOLD TOWEL MACHINE
FOR NARROW WIDTH
SIMILAR TO APW TOWEL.
BOX NO. 49-348 CARE
PAPER TRADE JOURNAL. J-21

Wanted: Two color Quarterfold 13½" Napkin printing folder. Give full particulars in reply to Box 49-336, care Paper Trade Journal. J-28

WANTED
Good used dispenser fold napkin machine. Address Box 49-356 care Paper Trade Journal. J-21

WANTED—W & P Shredders, Evaporator, Generators and Boilers, Slitters, Cutters Hydraulic presses, Sheridan Presses, Dryers. Address Box 49-273 care Paper Trade Journal. TF

WANTED

PAPER MANUFACTURER desire to purchase or invest in converting business of standard paper products. Address Box 49-274 care Paper Trade Journal. TF

WANTED—Brightwood Box Machine. Address Box 49-275 care Paper Trade Journal.

WANTED—Household Towel converting machine; Interfolded Towel Machine; Facial Tissue Machine. Address Box 49-344 care Paper Trade Journal. J-28

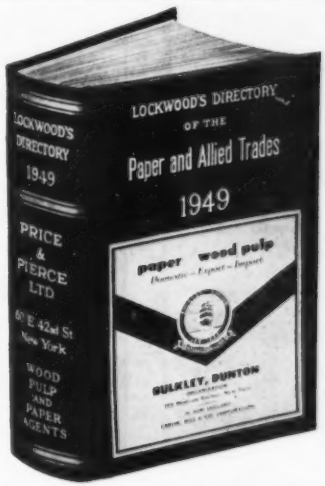
WANTED—1 Kamyr Wet Machine with press and cutter. Must be in good condition. Please state condition, size, capacity and price. Address Box 49-355 care Paper Trade Journal. A-4

FREE STORAGE

FREE STORAGE
of your Used Surplus Equipment in our 80,000 sq. ft. warehouse when consigned to us for resale. Write for details.
ROSS PAPER MACHINERY COMPANY
265 Passaic Street, Newark, N. J.
Tel. HUMBOLT 2-2177 TF

SERVICES OFFERED

WAX PROBLEMS?
Wax Chemist Experienced in Analysis, Research and Formulation of Industrial Wax-blends and Emulsions Offers His Consulting Services.
KRONER LABORATORIES
275 Water St. New York City



1949 EDITION

1420 PAGES
OF
INFORMATION
UNOBTAINABLE
ANYWHERE ELSE
IN ONE
SINGLE VOLUME

If these lists of pulp and paper mills—converters—paper merchants—mill officials—equipment manufacturers were sold separately—you would pay ten times the cost of this one complete directory.

FOR IMMEDIATE DELIVERY—$10.00 per copy

LOCKWOOD TRADE JOURNAL CO., INC.
15 WEST 47th STREET **NEW YORK 19, N. Y.**

H. WATERBURY & SONS CO.
ORISKANY, N. Y.
Manufacturers of
WATERBURY FELTS
Since 1860

WILLIAMS-GRAY CO.
221 N. LaSalle St., Chicago, Ill.
Lindsay & Niagara Wires . . Knox "Excelsior Felts . .
Siamese & Richland Dryer Felts . . Splicing Tissues . .
Deckle Webbing . . Carrier Rope, etc., etc

For Your Engraving Needs Use
NORTHERN ROLLERS
Engraved by
NORTHERN ENGRAVING AND MACHINE COMPANY
Green Bay, Wisconsin

USED EQUIPMENT
EXTENSIVE INVENTORY of used paper-mill machinery. Preparatory — forming — converting. Many bargains. Satisfactory guarantee.
SHARTLE BROS., Middletown, Ohio

THE MILL NUMBER
of
PAPER TRADE JOURNAL
will be
SEPTEMBER 22, 1949

APPLETON FELTS
SERVICE
DESIGN
FINISH
UNIFORMITY
DEPENDABILITY
APPLETON WOOLEN MILLS
APPLETON · WISCONSIN

CHAS. T. MAIN, INC.
CONSULTING ENGINEERS
Process Studies, Design, Specifications and Engineering Supervision
PULP AND PAPER MILLS
Steam, Hydraulic and Electrical Engineering
Reports, Consultation and Valuations
80 Federal Street — Boston 10, Mass.

K-121-B — DEINKING — DECOLORIZING — K-140
and
COOKING PROCESSES
THE KINSLEY CHEMICAL COMPANY
4538 West 130th Street — Cleveland 11, Ohio

GEORGE F. HARDY & SON
Mill Architects & Consulting Engineers
441 Lexington Avenue, New York 17, N. Y.
Established 1900
John A. Hardy — August F. Hartman, Thomas T. Whittier
Members—Am. Soc. C. E.; Am. Soc. M. E.; Eng. Ins. Can.; TAPPI
Consultation, Reports, Valuations — Paper and Pulp Mills, Hydro-Electric and Steam Power Plants
Design—Complete Plans—Supervision

HARDY S. FERGUSON & CO.
Consulting Engineers
200 FIFTH AVENUE, NEW YORK 10, N. Y.
Consultation, Reports, Valuation and Designs
for the Construction and Equipment of
Steam and Hydro-Electric Power Plants
Dams and Other Hydraulic Structures
Pulp and Paper Mills

CHEMIPULP PROCESS, INC.
CHEMICAL PULP MILL ENGINEERS
500 Woolworth Building — Watertown, New York
Associated with CHEMIPULP PROCESS LTD., Montreal, Quebec

F. PAUL BIRK
Consulting Engineer
64 West Randolph Street, Chicago 1, Illinois
Paper Mills — Power Plants

ALVIN H. JOHNSON & CO., INC.
PULP AND PAPER MILL ENGINEERS
Serving the Pulp & Paper Industries Since 1929.
415 Lexington Ave. — New York 17, N. Y.

MISCO
STAINLESS STEEL CASTINGS
for all equipment exposed to corrosion by sulphite acids or other corrosive agents
MICHIGAN STEEL CASTING CO., DETROIT 7, MICH.

RECORD PAPER & PULP STOCK VALVES "BONNETLESS SELF CLEARING" - - - "RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M., all iron, bronze or stainless steels, body parts plain or rubber lined.

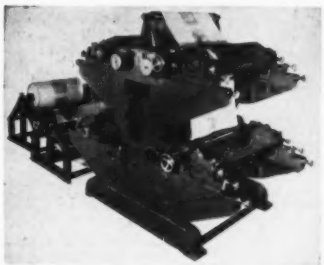
The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

- The "FAST THREADED" screw stem and ball bearing speeds valve operation.
- The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.
- The yoke mountings are such that yokes for various methods of gate operation are interchangeable.
- Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

"RECORD PRODUCTS EXTENSIVELY USED IN DEFENSE PROJECTS."

RECORD FOUNDRY & MACHINE COMPANY

LIVERMORE FALLS, MAINE, U. S. A.



Don't be satisfied with anything less than a . . .

WOLVERINE HYDRO-PRINTER

(Automatic *Hydraulic* Aniline Printing Press)

Investigate the many new technical innovations and improvements:

1. Hydraulic, instant on and off impression control.
2. Free wheeling, constant rotating ink rollers.
3. Instantaneous running register control.
4. One single impression drive gear (no back lash).
5. Most rigid solid and compact 5 inch frame construction.
6. A complete one push-button controlled press.

Check and compare these, and many other new features with any other Aniline Press on the market and then give your plant, and press operators the finest press to work with.

★ **Widths from 31" to 122"**
★ **From two to twelve colors**

Excellent for the speedy, highgrade production in printing all kinds of paper, board, and indispensable for cellophane, polyethylene saran and any other plastic films and foils.

Duplex Slitters and Rewinders, with and without cooling rolls in widths up to 86 inches wide.

Wolverine PAPER CONVERTING MACHINERY CORPORATION

19210 STANSBURY AVENUE, DETROIT 21, MICHIGAN

WEST VIRGINIA PULP and PAPER COMPANY

230 Park Ave., New York 17, N. Y.
35 East Wacker Drive, Chicago 1, Ill.
Public Ledger Building, Philadelphia 6, Pa.
503 Market St., San Francisco 5, Calif.

Manufacturers of West Virginia Mill Brand Papers

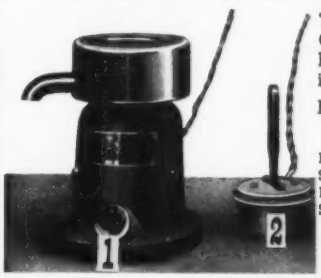
SUPERCALENDERED	ENVELOPE
ENGLISH FINISH	MIMEOGRAPH
LITHOGRAPH	INDEX BRISTOL
LABEL	POST CARD
OFFSET	COVER
EGGSHELL	CUP AND CONTAINER
MUSIC	FILE FOLDER
POSTER	TAG
BOND	COATED
WRITING	MACHINE COATED

KRAFT CONVERTING AND KRAFT ENVELOPE
KRAFT LINER BOARD

MILLS

Mechanicville, New York
Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Charleston, South Carolina

Williams High Speed Centrifuge



The Most Rapid Method for the Reduction of Stock to a Definite Moisture Content from which Samples May be Taken for Accurate Freeness Tests. For the Determination of Consistency of Beater and Machine Stock, Fiber in White Water, etc.

Development and Manufacture of Pulp and Paper Testing Instruments for 25 years.

Pulp Testing Ovens
Sheet Moulds
Laboratory Presses
Sheet Dryers
Wood Chip Classifiers
Pebble Mills
A.S.T.M. Penetration Testers
Smoothness Testers
Paper Moisture Testers
Freeness Testers
Laminating and Plastic Moulding Presses

WILLIAMS APPARATUS CO., Inc.

19 PARK PLACE — WATERTOWN, N. Y.

High quality pulp is an essential in the manufacture of high quality paper. So is the superior Fourdrinier wire cloth we have produced for 45 years.

THE LINDSAY WIRE WEAVING COMPANY
14001-14299 Aspinwall Avenue • Cleveland 10, Ohio

Lindsay WIRES
FOR PAPER MILLS

MURCO STAINLESS STEEL FLAT SCREEN

For use on either Fourdrinier or cylinder machines, MURCO Stainless Steel Flat Screen is particularly adaptable for running different colors and grades of paper and boards—any operation where cleaning and preparing the screen for the next run demands no loss of time.

Its exclusive features with high production, but low H.P. requirements are reasons for you to investigate the MURCO Stainless Steel Flat Screen . . . ask for details today.

VAT BOX
MAY BE TILTED FOR RAPID CHANGE OF SCREEN PLATES AND WASHING OUT!

All parts IN CONTACT WITH PAPER STOCK ARE STAINLESS STEEL

D. J. MURRAY MANUFACTURING CO. WAUSAU WISCONSIN

WHERE TO BUY

ABRASIVES
Monsanto Chemical Co.
Nopco Chemical Co.
Norton Co.

ADHESIVES
American Anode Incorporated
Arabol Mfg. Co.
E. I. Du Pont De Nemours & Co., Inc.
Glidden Company
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Co.
National Starch Products, Inc.
Nopco Chemical Co.

AGITATORS
American Paper Mchy. & Engrg. Works, Inc.
Appleton Machine Co.
The Biggs Boiler Works Co.
Dilts Machine Works, Inc.
Dorr Company
Downingtown Mfg. Co.
Hardinge Company, Inc.
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
D. J. Murray Mfg. Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
Warren Steam Pump Co., Inc.

ALLOYS
Michigan Steel Casting Co.
The Midvale Company

APRON CLOTH
Williams-Gray Co.

BAG MACHINES
Potdevin Machine Co.
Smith Winchester Mfg. Co.
Weber, Herman G., & Co., Inc.

BARKERS AND CHIPPERS
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Carthage Machine Co.
D. J. Murray Mfg. Co.
Valley Iron Works Co.

BARS
Dilts Machine Works, Inc.
E. D. Jones & Sons Co.
The Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BEARINGS
Black-Clawson Company
E. D. Jones & Sons Co.
Link Belt Company
Magnus Metal Corp.
Midwest-Fulton Machine Co.
The Moore & White Co.
Shartle Brothers Machine Co.
Timken Roller Bearing Co.
Valley Iron Works Co.

BEATERS AND JORDANS
American Paper Mchy. & Engrg. Works, Inc.
The Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
The Midwest Fulton Mch. Co.
Morden Machines Co.
J. J. Ross Company
Ross Paper Machy. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

BED PLATES
American Manganese, Steel Div.
Bahr Brothers Mfg. Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lukenweld, Div., Lukens Steel Co.
Midwest-Fulton Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BELTING
Allis-Chalmers Mfg. Co.
The Cincinnati Rubber Mfg. Co.
The Goodyear Tire & Rubber Company
Link Belt Company
J. E. Rhoads & Sons

BLEACHING AGENTS
E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Rohm & Haas Co.
Virginia Smelting Co.

BLEACHING BOILERS, ROTARY
The Biggs Boiler Works Co.

BLEACHING APPARATUS
William Allen Sons Co.
E. D. Jones & Sons Co.
Perkins & Sons, Inc., B. F.
Moore & White Co.
Niagara Alkali Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

BLOW PIPES & PITS
Carthage Machine Co.
Kalamazoo Tank & Silo Co.
Moore & White Co.
Murray Mfg. Co., D. J.
Walworth Company

BOILERS
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
Foster Wheeler Company

BOTTOMS
Kalamazoo Tank & Silo Co.
Valley Iron Works Co.

BRUSH ROLLS
M. W. Jenkins Sons, Inc.

BRUSHES
M. W. Jenkins Sons, Inc.

BURSTING TESTERS
E. J. Cady Co.
B. F. Perkins & Son Inc.
Testing Machines, Inc.

CALENDERS
Black-Clawson Company
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
Lobdell Co.
Edward J. McBride
The Moore & White Co.
Perkins & Sons, Inc., B. F.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

CARRIER ROPE
Williams-Gray Co.

CASEIN
American Cyanamid Co., Industrial Chem. Div.
Hercules Powder Co., Inc.

CASTINGS
American Cast Iron Pipe Co.
Appleton Machine Co.
American Manganese, Steel Div.
Babcock & Wilcox Co.
Black-Clawson Company
Carthage Machine Co.
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Frederick Iron & Steel, Inc.
Hamblett Machine Co.
Hardinge Company, Inc.
Lobdell Co.
Magnus Metal Corp.
Michigan Steel Casting Co.
The Midvale Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

WHERE TO BUY

Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Walworth Company

CENTRIFUGAL MACHINERY

Bird Machine Co.
Ross, J. O., Engrg. Co.
Shartle Brothers Machine Co.

CHAINS

American Manganese, Steel Div.
Chain Belt Company
Link Belt Company

CHEMICAL COTTON PULP

Hercules Powder Co.

CHEMICALS

Adell Chemical Co.
American Anode, Incorporated
American Cyanamid Co., Industrial Chem. Div.
Ansul Chemical Co.
Calco Chemical Co.
Calgon, Inc.
Cowles Chemical Company
Diamond Alkali Co.
Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuffs Corp.
Geigy Co., Inc.
Gottesman & Co.
Hercules Powder Co.
Hooker Electrochemical Co.
The Kinsley Chemical Company
Monsanto Chemical Company
National Aluminate Corp.
Niagara Alkali Company
Nopco Chemical Co.
Philadelphia Quartz Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Rohm & Haas Co.
Solvay Sales Corp.
Virginia Smelting Co.
Wyandotte Chemical Corp.

CHESTS

E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.

CHUCKS

Efficiency Engrg. Co.

CLEANING MATERIALS

Amer. Cyanamid & Chem. Corp.
Cowles Chemical Company
The Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Hercules Powder Co.
Monsanto Chemical Company
Nopco Chemical Co.
Philadelphia Quartz Co.
Pittsburgh Plate Glass Co.
Solvay Sales Corp.
Wyandotte Chemicals Corp., J. B. Ford Division

CLUTCHES

Appleton Machine Co.
Black-Clawson Company
Farrel-Birmingham Co.
Hardinge Company, Inc.
Hudson Sharp Machine Co.
Rodney Hunt Machine Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works

COATING MACHINERY

Frank H. Davis Co.
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Hudson Sharp Machine Co.
The Mayer Machine Co., Inc.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G., & Co., Inc.

COATING MATERIALS

American Anode Div., The B. F. Goodrich Chem. Co.
E. I. Du Pont De Nemours & Co., Inc.,
The Goodyear Tire & Rubber Company
Monsanto Chemical Company
Nopco Chemical Co.

COGS

The N. P. Bowsher Co.

COMPOUNDED LATICES

American Anode Div., The B. F. Goodrich Chem. Co.

COMPRESSORS

Allis-Chalmers Mfg. Co.
Nash Engineering Co.

CONSISTENCY REGULATORS

Askania Regulator Company
Bird Machine Company
DeZurik Shower Company
Paper & Industrial Appliances

CONSULTING ENGINEERS

Birk, F. Paul
Ebasco Services
Frank W. Egan & Co.
Ferguson, Hardy S.
C. M. Guest & Sons
Hardy, George F.
Alvin H. Johnson & Co., Inc.
Main, Inc., Chas. T.
Roderick O'Donoghue
The Rust Engrg. Co.
J. E. Sirrine & Co.
John Waldron Corp.
H. G. Weber & Co., Inc.
Frederick Wierk

CONTROLLERS

Askania Regulator Company
Black-Clawson Co.
The Bristol Co.
The Brown Instrument Co.
Cochrane Corp.
Johnson Corp.

CONTROLS

Askania Regulator Company
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
Johnson Corp.
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.

CONVEYORS

American Well Works
Black-Clawson Company
Chain Belt Company
Frederick Iron & Steel, Inc.
Industrial Brownhoist Corp.
Link Belt Company
Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O
Shartle Brothers Mch. Co.

CORE CUTTERS

Suburban Machine Co.

CORES

Elixman Paper Co.
Hubbard Spool Co.
Rodney Hunt Machine Co.
Smith & Winchester Mfg. Co.
Sonoco Products Co.
Walker-Goulard-Plehn Co.

COUPLINGS

Black-Clawson Company
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John

CRANES

Cleveland Crane & Engrg. Co.
Industrial Brownhoist Corp.
Link Belt Company
Whiting Corp.

CUP AND CONTAINER MACHINES

Mercury Engrg. Corp.

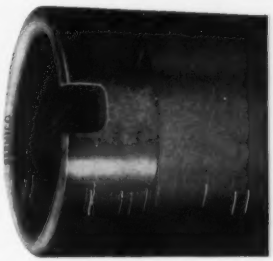
CUTTERS

Dilts Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Moore & White Co.
Perkins & Son, Inc., B. F.
The Smith & Winchester Mfg. Co.
Taylor, Stiles & Co.

SONOCO
Paper Mill Cores
MADE TO FIT
Your Individual Specifications

RETURNABLE

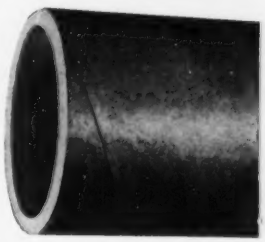
Made in one quality only. Equipped with either heavy-duty or light-duty metal ends.



NON-RETURNABLE
Made in three qualities—

RHINO NON-RETURNABLE

A really tough core reasonably priced



DURO Better quality with superior strength

EN-DURO For those that need the best

Samples, prices and further information gladly sent on request. Just write our nearest sales office—Hartsville, South Carolina or Mystic, Conn.

SONOCO PAPER CARRIERS

REG. U. S. PAT. OFF.

SONOCO PRODUCTS COMPANY
BRANTFORD, ONT. HARTSVILLE, S. C. MYSTIC, CONN.
SHIPPING POINTS: LOWELL, MASS. HARTSVILLE, S. C.
DEPENDABLE SOURCE OF SUPPLY

PAPER KNIFE GRINDING

EASY ACCURATE ECONOMICAL

Rogers Type NT

Save production time, knife life, money . . . use this fully automatic NT that requires no experienced operator. Precision grinding for any straight knife up to 220" long . . . 13 sizes. Many cost saving Rogers features.

ROGERS CC-3 for FLEXIBILITY in CIRCULAR GRINDING

For grinding circular, splitting, double bevel slitter, circle and ring shear knives and bottom slitters. Accurate and fast. Handles knives from 2" to 20" in diameter. No skilled operator necessary.

Write for details on the NT or CC-3 today.

SAMUEL C. ROGERS & CO.

Manufacturers of Grinding Equipment Since 1887

202 Dutton Ave. Buffalo 11, N. Y.

Photo, Courtesy J. M. Huber Corporation

Single Instrument Measures Smoothness, Porosity and Softness of Paper

You just interchange the lower test plates in the GURLEY-HILL S-P-S Tester to convert it into an instrument for testing either smoothness, porosity or softness of any type of paper, by measuring a given air-leakage over or through the paper.

This 3 in 1 laboratory "assistant" is simple to operate, quick and accurate, and a real utility instrument where printing quality of paper must be reliably measured.

Bulletin No. 1400 describes the S-P-S Tester as well as other Gurley paper testing instruments. It's worth writing for today. W. & L. E. Gurley, 520 Fulton St., Troy, New York.

WHERE TO BUY

CYLINDERS
Askania Regulator Company
M. W. Jenkins Sons, Inc.
National Tube Co.

DAMPENERS
Perkins & Son, Inc., B. F.
Valley Iron Works Co.

DECKLE WEBBING
Williams-Gray Co.

DE-INKING
Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
Roderick O'Donoghue
Shartle Brothers Machine Co.

DEINKING CHEMICALS
E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Kinsley Chemical Co.
Midwest-Fulton Machine Co.
Monsanto Chemical Company
Philadelphia Quartz Co.

DENSOMETERS
W. & L. E. Gurley

DESIGN CONSTRUCTION
Ebasco Services

DETERGENTS
Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

DEWAXING CHEMICALS
General Dyestuff Corp.
Nopco Chemical Co.

DIGESTERS
Babcock & Wilcox Co.
The Bigga Boiler Works Co.
Combustion Engrg. Co., Inc.
Foster Wheeler Corp.
Lukenweld
Pusey & Jones Corp.

DIRTEC
Bird Machine Co.

DISPERSING AGENTS
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.

DOCTORS
Bird Machine Company
Black-Clawson Company
Downingtown Mfg. Co.
Lobdell Co.
Lodding Engineering Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES
Bird Machine Company
Black-Clawson Company
Lodding Engrg. Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DRIERS
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Hardinge Company, Inc.
Lukenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
The Youngstown Welding & Engrg. Co.

DRIVES
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Bird Machine Co.
Black-Clawson Company
Chain Belt Company
Davis, Frank H., Co.
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
General Electric Company
Gibbs-Brower Company, Inc.
Rodney Hunt Machine Co.
Link Belt Company
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Syco Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

DRYER DRAINAGE
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.

DUSTERS
Appleton Machine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
M. W. Jenkins Sons, Inc.
E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co.
John Waldron Corp.

DUSTING BRUSHES
M. W. Jenkins Sons, Inc.

DYESTUFFS
American Cyanamid Company, Calco Chemical Div.
Ciba Company
E. I. du Pont de Nemours & Co., Inc.
Jelgy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.
C. K. Williams & Co.
Witco Chemical Co.

EMBOSSING ROLLS
The Appleton Machine Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Midvale Company
Northern Engraving & Mch. Co.
B. F. Perkins & Son, Inc.
John Waldron Corp.

EMULSIFIERS
Adell Chemical Company
General Dyestuff Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

ENZYMES
Rohm & Haas Co.

EVAPORATORS
Davis Engrg. Corp.
Foster Wheeler Corp.
Goslin-Birmingham Mfg. Co., Inc.
Murray, D. J., Mfg. Co.
Swenson Evaporator Co., Div. of Whiting Corp.

EXPANDERS
Mount Hope Machinery Co.

FANS
General Electric Co.
B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O.

FEEDERS
Hardinge Company, Inc.
Merrick Scale Mfg. Co.
Leeds & Northrup

FELTS
Appleton Woolen Mills
Asten-Hill Mfg. Co.
Bulkley, Dunton Pulp Co., Inc.
Draper Bros. Corp.
Huyck & Son, F. C.
Lockport Felt Co.
Mt. Vernon-Woodbury Mills, Inc.
Morey Paper Mill Supply Co.
Orr Felt & Blanket Co.
Shuler & Benninghofen
Waterbury Felt Co.
Waterbury, H., & Sons Co.
Williams-Gray Co.

FELT CLEANERS
Adell Chemical Company
Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Nopco Chemical Co.

FELT CONDITIONERS
Bird Machine Co.

FELT GUIDES
Black-Clawson Co.
Frank W. Egan & Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

FILLERS
American Cyanamid Company, Industrial Chemicals Division
W. H. Loomis Talc Corp.
A. M. Meincke & Son, Inc.
Vanderbilt Co., R. T.
Witco Chemical Co.

FILTERS
Bird Machine Company
Cochrane Corp.
Hardinge Company, Inc.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
Witco Chemical Co.
Walworth Company

FITTINGS
Crane Company
The Kuhns Bros. Co.
Phoenix Products Co.
Walworth Company

FLEXIBLE COUPLINGS
Ajax Flexible Coupling Co.

FLOORING, GRATING AND TREADS
The Goodyear Tire & Rubber Company
Norton Co.

FLOW BOXES, STAINLESS-CLAD
Lukens Steel Co.

FORMING MACHINES
Black-Clawson Co.
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
Oliver United Filters, Inc.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

FREENESS TESTERS
Testing Machines, Inc.

GASKETS
The Goodyear Tire & Rubber Company

GEARS
American Manganese, Steel Div.
Black-Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Valley Iron Works Co.
Waldron Corp., John
Westinghouse Electric Corp.

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company

GUIDES, WEB
Askania Regulator Company
The Moore & White Co.
Mount Hope Machinery Co.
Bound Brook Engrg. Co.

GUMMING MACHINES
Dilts Machine Works.

GUMS
National Starch Products Inc.
Stein-Hall Co., Inc.

HEADS
Babcock & Wilcox Co.
Lukens Steel Company

HEAT EXCHANGERS AND RECOVERY SYSTEMS
William Allen Son's Company
Davis Engrg. Corp.
Foster Wheeler Corp.
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

HEATING, VENTILATING & AIR CONDITIONING
The Appleton Machine Co.
Armstrong Machine Works
Cochrane Corp.
Davis Engrg. Corp.
E. D. Jones & Sons Co.
General Electric Co.
Leeds & Northrup
Minneapolis-Honeywell Regulator Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

HOSE (Air, Water, Suction, etc.)
The Goodyear Tire & Rubber Company

IMPREGNANTS
American Anode Div., The B. F. Goodrich Chem. Co.

INDENTING MACHINES
Dilts Machine Works.

INDUSTRIAL TRACTORS
Clark Equipt. Co., Clark Tractor Div.
Towmotor Corp.

INK GRAVURE
Gotham Ink & Color Co.

INSTRUMENTS, TESTING AND MEASURING
Askania Regulator Company
Bauer Brothers Co.
N. P. Bowsher
The Bristol Company
The Brown Instrument Co.
E. J. Cady Company
Cochrane Corp.
The Foxboro Company
General Electric Company
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Williams Apparatus Co., Inc.

JOINTS
Johnson Corp.
Perfecting Service Corp.

JORDAN FILLINGS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black-Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KNOT BORING MACHINES
DeZurik Shower Company

LABORATORIES
Timber Engrg. Co.

LABORATORY EQUIPMENT
William Allen Son's Company
Appleton Machine Co.
Bauer Brothers Co.
The Bigga Boiler Works Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.

T. M. I. QUALITY CONTROL

Fully Automatic Schopper Riegler Type Freeness Tester Eliminates Human Error

ALL TESTERS FOR PULP & PAPER INDUSTRY

MULLEN-
ELMENDORF
STIFFNESS
POROSITY

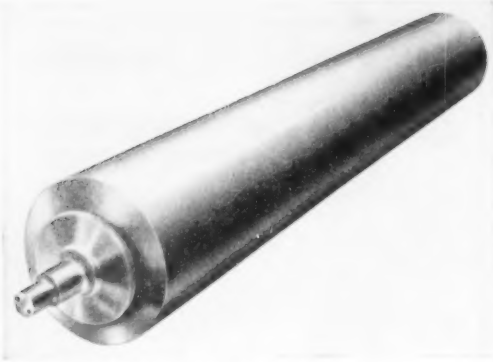
SCHOPPER TYPE
TENSILE
FREENESS
FOLDING
HINDE & DAUCH CRUSH

T.M.I.—MICROMETERS—SCALES

TESTING MACHINES Inc.
429 W. 42nd St., New York 18, N. Y.

Old inaccurate Scales, Micrometers and other testers recalibrated and made over like new.

Price & Pierce ltd Pulp & Paper agents
60 E.42 ST. N.Y. 17.



McBRIDE brings you a
Complete* ROLL *Service

PRODUCTION: Modern production facilities for large and small rolls of all types in metal, wood, and rubber covered.

ENGINEERING: McBride engineers work with you to solve individual roll problems, then supervise production to assure rolls that meet your exact needs.

MAINTENANCE: A special department for maintenance and repair work is your assurance of prompt, top quality work.

Table Rolls	Couch Rolls	Stainless Steel Rolls
Wire Carrying Rolls	Press Rolls	Wood Rolls
Felt Carrying Rolls	Brass Rolls	Repairs to Rolls

Mc BRIDE

Edward J. McBride • 1394 Adams Ave., Philadelphia 24, Pa.
ROLLS OF ALL TYPES FOR EVERY PURPOSE

THE PULP & PAPER TRADING CO.

New York

21 East 40th Street — Cable: Reputation

WOOD PULP

Chemical — Mechanical

Bleached and Unbleached

Also Paper and Board

European Representative

JACOB VERSTEEGH

Stockholm Sweden

WHERE TO BUY

LAMINATING MACHINES
Dilts Machine Works.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.
Suburban Machine Co.

LUBRICANTS
Sinclair Refining Co.
Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MAGAZINE REELS
Dilts Machine Works (Kohler System).

MATERIALS HANDLING
Cleveland Crane & Engrg. Co.
Frank G. Hough Co.
The Wellman Engrg. Co.

MICROMETERS & CALIPERS
E. J. Cady Co.
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

MOISTURE CONTENT CONTROL
Askania Regulator Company
Midwest Fulton Machine Co.
Stickle Steam Specialties Co.

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
Chicago Electric Company
Fairbanks, Morse & Co.
General Electric Company
Ingersoll-Rand Co.
Reliance Electric & Engrg. Co.

NICKEL AND NICKEL ALLOYS
The International Nickel Co.

NOZZLES
Link Belt Company

PACKING BOXES
Johnson Corporation
The Moore & White Co.
Perfecting Service Corp.
Shartle Brothers Machine Co.

PAINT
American Marietta Co., Valdura Division

PAPER MACHINES
Bagley & Sewall Co.
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINE SLICES
Black-Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Suburban Machine Co.

PASTING MACHINES
Black-Clawson Company
Davis, Frank H., Co.
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

PENSTOCKS
The Biggs Boiler Works Co.

PERFORATED METAL
Allis-Chalmers Mfg. Co.

PIPE
American Cast Iron Pipe Co.
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Michigan Pipe Co.
Michigan Steel Casting Co.
National Tube Co.
Walworth Company
Youngstown Welding & Engrg. Co.

PIPE FITTINGS
American Cast Iron Pipe Co.
The American Rolling Mill Co.
Crane Company
Ladish Company
Michigan Steel Casting Co.
Phoenix Products Co.
Walworth Co.

PIPE MARKERS
W. H. Brady Co.

PITCH CONTROL
General Dyestuff Corp.
Monsanto Chemical Company
Rohm & Haas Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
J. O. Ross Engrg. Corp.
Lukenweld
Lukens Steel Company
Timken Roller Bearing Co.

PLUGS
The Appleton Machine Co.
Black-Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

PRECISION SAMPLE CUTTER
Testing Machines, Inc.

PRESERVATIVES
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

PRESSURE VESSELS, STEEL AND ALLOY
William Allen Son's Company
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
Combustion Engrg. Co., Inc.
Foster Wheeler Corp.
The Midvale Company

PRESSES
Black-Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
The Moore & White Co.
Paper Converting Machine Co., Inc.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULP CLASSIFIER
The Bauer Bros. Co.

PULP STOCK VALVES
Crane Company
Record Fdy. & Mach. Co.
Shartle Bros. Mach. Co.

PULPERS
American Paper Mchy. & Engrg. Works, Inc.
Bauer Brothers Co.
Dilts Machine Works
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Shartle Brothers Machine Co.

PULPS
Brown Company
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Elof Hansson, Inc.
Lyddon & Co. (America), Inc.
Parsons & Whittemore, Inc.

Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co
Pulp Sales Corp.

PULPSTONES

Norton Company

PUMPS

Allis-Chalmers Mfg. Co.
American Manganese, Steel Div.
Black-Clawson Company
Buffalo Pumps, Inc.
Byron Jackson Co.
DeLaval Steam Turbine Co.
Dorr Company
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Frederick Iron & Steel, Inc.
Gibbs-Brower Company, Inc.
Ingersoll-Rand Co.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Paper Converting Mch. Co.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Company

RADIANT BURNERS

Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES

Adell Chemical Co.
William Allen Son's Company
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS

Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECAUSTICIZING PLANTS

The Dorr Company

RECOVERY SYSTEMS

William Allen Son's Company
Babcock & Wilcox Co.
Bulkley, Dunton Pulp Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O.
Valley Iron Works Co.

REELS

The Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works (Kohler System)
Downingtown Mfg. Co.
Hudson Sharp Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.

REFINERS

Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS

Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Bristol Company
DeZurik Shower Company
The Foxboro Company
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
Midwest-Fulton Machine Co.
Minneapolis-Honeywell Regulator Co.
National Technical Laboratories
Shartle Brothers
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan

RESEARCH CHEMISTS

Timber Engrg. Co.

RESINS

American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Rohm & Haas Co., Resinous Products Div.

ROLLS

American Cast Iron Pipe Co.
Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Edward J. McBride
The Midvale Company
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, B. F., & Sons Co.
Philbrick Engrg. Corp.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John
The Youngstown Welding & Engrg. Co.

ROLL COVERS

The Cincinnati Rubber Mfg. Co.
The Goodyear Tire & Rubber Company
Edward J. McBride
Stowe-Woodward, Inc.

ROLL HANDLING EQUIPMENT

Dilts Machine Works (Kohler System).

ROLL STANDS

Cameron Machine Co.
Frank W. Egan & Co.
Moore & White Co.
Potdevin Machine Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

ROPE CARRIERS

The Moore & White Co.

ROTARY BOILERS

The Biggs Boiler Works Co.

ROTARY STEAM JOINTS

Johnson Corp.
The Moore & White Co.
Perfecting Service Corp.

RUBBER PRODUCTS

The Goodyear Tire & Rubber Company

SATURANTS

American Anode Div., The B. F. Goodrich Chem. Co.

SATURATING MACHINES

Black-Clawson Company
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Noble & Wood Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

SAVEALLS

Bird Machine Company
Hardinge Company

SCALES

Fairbanks, Morse & Co.
Merrick Scale Mfg. Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

SCREEN PLATES

Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.

SCREENS

Allis-Chalmers Mfg. Co.
American Paper Mchy. & Engrg. Works, Inc.
Appleton Wire Works
Appleton Machine Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

SHEET MACHINES

Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Suburban Machine Co.
Valley Iron Works Co.

SHOWER PIPES

Bird Machine Company
DeZurik Shower Company
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Shartle Bros. Mach. Co.
Smith & Winchester Mfg. Co.

SHREDDERS

Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.

SIZING

American Cyanamid Company, Industrial Chemicals Division
Black-Clawson Company
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Glidden Company
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Philadelphia Quartz Co.
Stein-Hall Co., Inc.

SIZING TESTER

W. & L. E. Gurley

SLIME CONTROL

W. A. Cleary Corp.
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
National Aluminate Corp.
Rohm & Haas Co.

SLITTERS

Black-Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Machinery & Prod. Engrg. Corp.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS

William Allen Son's Company
The Biggs Boiler Works Co.

SPECIAL MACHINERY

Dilts Machine Works.

SPLICING TISSUE

Williams-Gray Co.

SOFTNESS-STIFFNESS TESTER

W. & L. E. Gurley
Testing Machines, Inc.

SOLUBLE OILS

Adell Chemical Company
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

SOLVENTS

Adell Chemical Company

STAINLESS STEEL

American Cast Iron Pipe Co.
Armco Steel Corp.
Michigan Steel Casting Co.
The Midvale Company
U. S. Steel Corp.

STARCH

American Cyanamid Company, Industrial Chemicals Division
A. M. Meincke & Son, Inc.
Clinton Industries, Inc.
The Hubinger Co.
National Starch Products Inc.
Stein-Hall Co., Inc.

STEAM JOINTS

The Moore & White Co.

STEAM SPECIALTIES

Babcock & Wilcox Co.
Cochrane Corp.
Combustion Engrg. Co., Inc.
Davis Engrg. Corp.
Johnson Corp.
Midwest-Fulton Machine Co.
Pertecting Service Corp.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

STEEL

Allegheny Ludlum Steel Corp.
Armco Steel Corp.
Carnegie Illinois Steel Co.
Lukens Steel Company
Midvale Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD

Babcock & Wilcox Co.
Lukens Steel Company

STEEL TANKS

William Allen Son's Company
The Biggs Boiler Works Co.

STRAPPINGS & STRAPPING MACHINES

The Stanley Works

STUFF CHESTS

Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES

Black-Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

SUCTION UNIT

Paper & Industrial Appliances, Inc.

SULPHUR

American Cyanamid Company, Industrial Chemicals Division
Texas Gulf Sulphur Co.
Witco Chemical Company

SULPHUR BURNERS

Valley Iron Works Co.

SULPHUR DIOXIDE

American Cyanamid Co., Calco Chemical Div.
Anaul Chemical Company
Virginia Smelting Co.

SUPERCALENDERS

The Appleton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES

American Anode Div., The B. F. Goodrich Chem. Co.
The Goodyear Tire & Rubber Company
Nopco Chemical Co.

TACHOMETERS

The Brown Instrument Co.

TAKE-OFF UNITS

Dilts Machine Works (Kohler System).

TALC

American Cyanamid Company, Industrial Chemicals Division
W. H. Loomis Talc Corp.

TANKS

William Allen Son's Company
The Biggs Boiler Works Co.
Cochrane Corp.
Kalamazoo Tank & Silo Co.
The Noble & Wood Machine Co.
B. F. Perkins & Son, Inc.
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Waldron Corp., John

WHERE TO BUY

TEARING TESTERS
Testing Machines, Inc.

TENSILE TESTERS
B. F. Perkins & Son, Inc.
Testing Machines, Inc.

THICKENERS, DECKERS AND SAVEALLS
The Appleton Machine Co.
Bird Machine Company
Bulkley, Dunton Pulp Co., Inc.
Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Hardinge Co., Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Oliver United Filters, Inc.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Valley Iron Works Co.

TIMBER ROOF TRUSS DESIGNS
Timber Engrg. Co.

TITANIUM
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.
Witco Chemical Company

TOOLS
The Stanley Works
Walworth Company

TRACTOR SHOVELS
Frank G. Hough Co.

TRACTORS & TRUCKS
Frank G. Hough Co.
Fowmotor Corp.
Clark Equipt. Co., Clark Tractor Div.

TRANSMISSIONS
Link Belt Company

TRAPS
Armstrong Machine Works
Cochrane Corp.
Crane Co.
Johnson Corporation
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

TUBES
Babcock & Wilcox Co.
National Tube Co.

TUBING MACHINES
Dilts Machine Works.

TUBING, MECHANICAL
National Tube Co.

TUBS
Rodney Hunt Machine Co.
Shartle Brothers
Valley Iron Works Co.

TURBINES
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company
Hunt, Rodney, Mach. Co.

TURPENTINE RECOVERY
Foster Wheeler Corp.

UNWINDERS
Dilts Machine Works (Kohler System).

USED EQUIPMENT
Frank H. Davis Company
Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.
Suburban Machine Co.

VALVES
Askania Regulator Co.
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
Crane Company
Dilts Machine Works
The Foxboro Company
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdy. & Mch. Co.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies
Trimbey Mach. Wks.
Valley Iron Works Co.
Walworth Company

WASHERS
Bird Machine Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
Oliver United Filters
The Sandy Hill Iron & Brass Wks.
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

WASTE TREATING EQUIPMENT
Alhydro, Inc.
The Dorr Company

WATER CONDITIONING
Alhydro, Inc.
Calgon, Inc.
Cochrane Corp.
General Dyestuff Corp.
National Aluminate Corp.

WATER DISPERSIONS
Alhydro, Inc.
American Anode, Inc.
Rohm & Haas Co., Resinous Products Div.

WATER FINISH EQUIPMENT
Dilts Machine Works.

WAXES
Hercules Powder Co.

WAXING MACHINERY
Black-Clawson Co.
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

WEB TENSION CONTROL
Dilts Machine Works (Kohler System).

WELDING EQUIPMENT
General Electric Company
Walworth Company

WET MACHINES
Black-Clawson Co.
Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Pusey & Jones Company
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WETTING AGENTS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Hercules Powder Co.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

WHITE WATER HEATERS, AUTOMATIC SELF CLEANING TYPE
Davis Engineering Corp.

WINDERS AND REWINDERS
The Appleton Machine Co.
Black-Clawson Company
Cameron Machine Co.
Dietz Machine Works
Dilts Machine Works (Kohler System)
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Langston Co., Samuel M.
Moore & White Co.
Paper Converting Mch. Co.
Potdevin Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Waldron Corp., John

WINDING ROLL CHANGERS
Dilts Machine Works (Kohler System).

WIRE BRUSHES
M. W. Jenkins Sons Inc.

WIRES
Appleton Wire Works
Bulkley, Dunton Pulp Co., Inc.
International Wire Works
Lindsay Wire Weaving Co.
Williams-Gray Co.

WIRE BRUSHES
Williams-Gray Co.

WOOD SPLITTERS
The Appleton Machine Co.
Carthage Machine Co.

ADVERTISERS

IN THIS ISSUE

A

American Leather Belting Ass'n 3
Appleton Wire Works, Inc. .. 55
Appleton Woolen Mills 60

B

Birk, F. Paul 60
Blaw-Knox Co. 55

C

Cameron Machine Co. 8
Chemipulp Process, Inc. 60
Cincinnati Rubber Mfg. Co. ... 53
Classified Advertising 56
Crane Co. 4
Crucible Steel Co. of America .. 2

D

Davis, Frank H., Co. 58
DeLaval Steam Turbine Co. 9
Dow Chemical Co. 36

F

Fairbanks, Morse & Co. 6
Farrel Birmingham Co., Inc. .. 31
Ferguson Co., H. K. 52
Ferguson, Hardy S. 60

G

General Electric Co. .....26 & 27
Gibbs-Brower Co., Inc. 59
Goodrich Chemical Co. 21
Goslin-Birmingham Mfg. Co. Front Cover
Gurley, W. & L. E. 64

H

Hall Co., Inc., Thomas W. 56
Hardy, George F., & Son 60
Huyck & Sons, F. C. 62

J

Johnson & Co., Alvin H. 60

K

Kinsley Chemical Co. 60

L

Langston, Samuel M., Co. 15
Lindsay Wire Weaving Co. .. 62
Lukenweld Div., Lukens Steel Co. 11

M

Main, Chas. T., Inc. 60
Magnus Metal Corp. 51
McBride, Edward J. 66
Mead Sales Co. 19
Michigan Steel Casting Co. ... 60
Mt. Vernon Woodberry Mills .. 13
Murray Mfg. Co., D. J. 62

N

No. Engrg. & Mch. Co. 60

P

Price & Pierce, Ltd. 65
Pulp & Paper Trading Co. 66

R

Raymond Service, Charles P. ... 56
Record Fdy. & Machine Co. ... 61
Rice Employment Agency 56
Rogers & Co., S. C. 64
Rohm & Haas Co. 17
Ross Paper Machinery Co. 57

S

Shartle Brothers Machine Co. . 60
Shuler & Benninghofen 23
Sonoco Products Co. 63

T

Testing Machines Inc. 65
Timken Roller Bearing Co. Back Cover

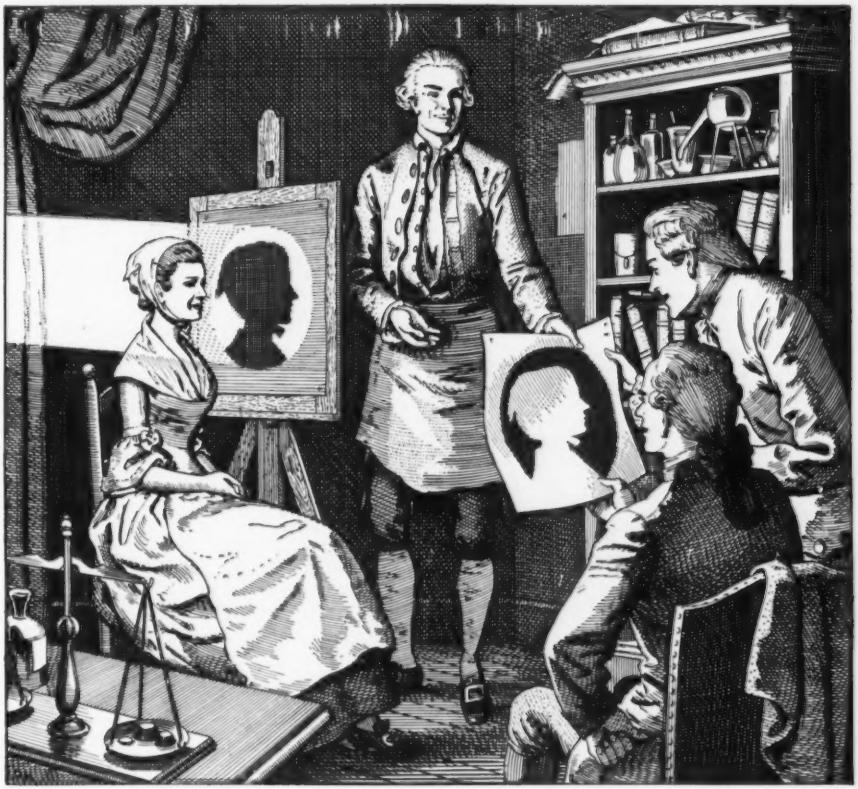
V

Valley Iron Works Co. 29
Virginia Smelting Co. 54

W

Waterbury & Sons Co., H. ... 60
West Virginia Pulp & Paper Co. 61
Weyerhaeuser Timber Co. 25
Williams Apparatus Co. 61
Williams Gray Co. 60
Wolverine Paper Conv. Mchy. Corp. 61

HUGHES PRINTING CO.
EAST STROUDSBURG, PA.



The Secret Born in a Darkroom

In 1802 two Englishmen—Thomas Wedgwood and Sir Humphry Davy—published a paper that was to make history. They described how, in a darkened room, they had made profiles by casting shadows on paper moistened with nitrate of silver. But when exposed to light the silhouettes soon disappeared. Not until 1835 did another Englishman, W. H. Fox Talbot, devise a way to make a photographic image permanent. And it was more than a half-century later that George Eastman introduced his first small hand-held camera, followed it with transparent, flexible roll film and special papers, and made photography available to all.

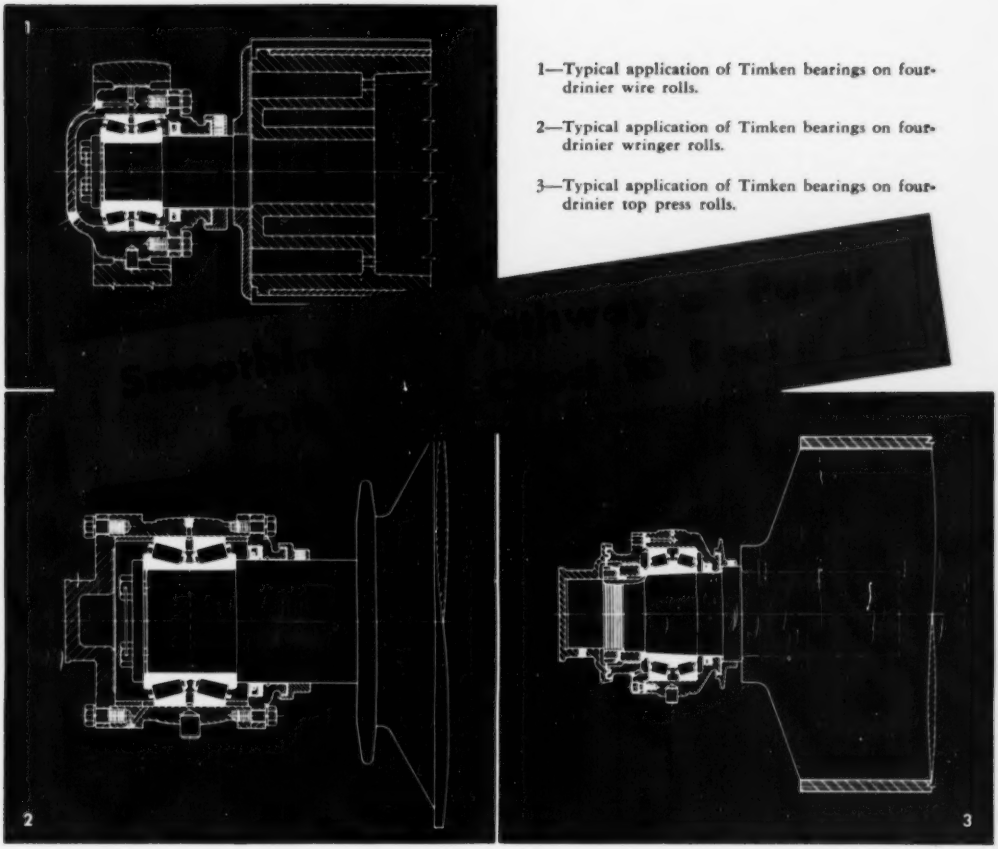
Modern photography has vastly expanded printing and publishing, and has increased enormously the uses of paper in business, education, government, science, and the arts. Thus the secret born in a darkroom greatly stimulated the growth of America's paper industry.

The dramatic story of paper is told in the sound-and-color film, "Paper — Pacemaker of Progress," and in a book under the same title. Both are presented by F. C. Huyck & Sons as a tribute to the Paper Industry. The book will be sent free upon request.

F. C. HUYCK & SONS • *Kenwood Mills* • RENSSELAER, N. Y.

KENWOOD WOOD PRODUCTS

HUYCK *Felts*



1—Typical application of Timken bearings on fourdrinier wire rolls.

2—Typical application of Timken bearings on fourdrinier wringer rolls.

3—Typical application of Timken bearings on fourdrinier top press rolls.

When the pulp begins its passage through the paper machine, its future as paper depends largely upon the bearing support given to wires and felts in the fourdrinier, press section and drier section.

When the bearings are Timken tapered roller bearings, the material progresses smoothly, swiftly from stock chest to reel and the resultant web of paper meets every demand for quality and uniformity.

For, Timken bearings transmit their inherent smoothness and precision to rolls and shafts, keeping them always in proper relationship; always in correct alignment; always completely protected against wear, radial, thrust and combined loads.

Power is greatly economized; lubrication is reduced; wire and felt life is prolonged.

Many paper machines that started their careers many years ago on Timken roller bearings still are going strong; still producing good paper at low cost. And in most cases the original Timken bearings still are on the job.

Make sure you have Timken tapered roller bearings in paper making equipment of all kinds — whether you build or buy. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address "TIMROSCO".

TIMKEN
TAPERED ROLLER BEARINGS

NOT JUST A BALL ○ NOT JUST A ROLLER ⊂⊃ THE TIMKEN TAPERED ROLLER ⊂⊃ BEARING TAKES RADIAL ↕ AND THRUST →◫← LOADS OR ANY COMBINATION →✳←